Agriculture
Canada

Policy
Branch

Direction générale
des politiques

WORKING PAPER

Canada

91-05104/

Working papers are (1) interim reports completed by the staff of the Policy Branch, and (2) research reports completed under contract. The former reports have received limited review, and are circulated for discussion and comment. Views expressed in these papers are those of the author(s) and do not necessarily represent those of Agriculture Canada.

REVIEW OF THE CANADIAN MEAT IMPORT ACT

(Working Paper 7/91)

Dr. L. Martin[1], Dr. Erna van Duren[2]
Jim Townshend[3], Dr. Robin Reenstra-Bryant[4]

[1]George Morris Centre, University of Guelph.
[2]Agricultural Economics and Business, University of Guelph.
[3]Jim Townshend and Associates Limited.
[4]Brystra Consultants.

May 1991

This report was completed under contract with the Policy Branch, Agriculture Canada, 1991.

Table of Contents

Summary i

1.0 Introduction 1-1
1.1 Objectives of the Study 1-4

2.0 International Trade and Trade Issues 2-1
2.1 International Trade in Slaughter Cattle 2-1
2.2 International Trade in Beef 2-3
2.3 Cattle Slaughter in Canada 2-9
2.4 The International Beef Market 2-12
2.5 Issues 2-15

3.0 Impact of Offshore Imports and of Alternative Formulations of the Meat Import Act 3-1
3.1 Review of Literature 3-1
3.2 Some Aspects of the North American Beef Industry 3-7
3.3 The Model 3-12
3.4 Solving the Model 3-19
3.5 Policy Scenarios Analyzed 3-23
3.6 Results of the Policy Analysis 3-33
3.6.1 Effects of Quantities - Free Trade in North America 3-33
3.6.2 The Effects of Scenarios with Different Formulas for Calculating Access Under the Meat Import Act 3-35
3.6.3 Effects of Tariff or Transfer Cost Increases Within North America 3-36
3.6.4 Effects of U.S. Restrictions on Canadian Exports 3-37
3.6.5 The Effects of Offshore Imports With and Without Restrictions in North America 3-37
3.6.6 Effects of the U.S. Meat Import Law Being Converted to an Equivalent Tariff 3-38
3.6.7 Summary 3-39
3.7 Analysis of the Global Minimum Access Clause (GMAC) 3-43

4.0 Regulatory Considerations 4-1
4.1 Current Ramifications of Foot and Mouth Disease Restrictions on Imports for Canada 4-1
4.2 U.S.-Canada Regulatory Relationships Affecting Beef Trade 4-3

5.0 Policy Considerations 5-1
5.1 Current Commitments and Constraints 5-1
5.1.1 GATT 5-2
5.1.2 The Canada-U.S. Trade Agreement 5-3
5.1.3 Canadian Law 5-5
5.1.4 Canada's Position in the Multi-National Trade Negotiations 5-5
5.2 Canada's Alternatives 5-6
5.3 Conclusions 5-11
Bibliography 5-13

SUMMARY

This study has four objectives. The procedures used in the analysis, the results and the study team's conclusions are discussed below with respect to each of the objectives. Subsequently, the policy implications of the analysis are summarized from Section 5.0 of the report.

Summary

As indicated above, the results will be summarized and conclusions made about each of the four objectives. They are outlined below by objective.

To Assess the Nature and Role of Canada's Trade in Beef in the Canadian and North American Markets

In order to address this objective, international trade and trade patterns are analyzed in Section 2.0 of the Report. In addition, issues regarding animal health and health inspection are discussed in Section 4.0. The analysis of trade patterns examines trade in live cattle as well as in beef. In conducting this analysis, both the international market as well as regional aspects of the North American market are examined.

A number of conclusions about the role and nature of Canada's international trade in beef can be made. They are as follows:

- Off-shore imports of low quality (or grinding) beef serve the role in the North American market of supplementing domestic production from cull cows and from the trim of fed steers and heifers. Canada's major suppliers of this product are Oceania and, more recently, Nicaragua.
- Depending upon the year, either New Zealand or Australia are Canada's major suppliers of low quality beef. In only one year, 1989, has another country been close to the leadership position.

- Canada's imports from offshore have grown modestly during the past five years. Table C1 contains Canada's offshore imports in both absolute and relative terms. While the numbers show an increase, the increase is modest in view of the fact that the late 1980's was a period of first declining and then modestly increasing beef cow herds.
- Nicaraguan beef imports grew rapidly during the late 1980's. However, at their maximum in 1989, they represented two percent of Canada's total beef production and 0.2 percent of total North American production. Imports from Nicaragua declined in 1990.
- While Canada is a net importer from offshore, the country's trade balance with the United States is more complex. Canada's exports are of cows and grinding beef to the United States, where the demand for low quality beef appears to be more buoyant than in Canada. Canada also exports steers and heifers to the United States and is a growing net importer of beef from the United States. The role of this trade has a number of dimensions. First, Canadian exports of live heifers and steers provide raw material to U.S. packing plants that are increasingly competitive for reasons that are investigated in the annex to this report. The same is true for Canadian exports of cows. However, exports of cows emanate from both eastern and western Canada (primarily from the dairy herd in eastern Canada and from the beef herd in Western Canada), while the vast majority of Canada's exports of heifers and steers originate in western Canada. This likely reflects some competitive advantage in the west in live cattle production and the growing competitiveness of western U.S. packing plants. Canada's imports of U.S. beef are primarily to eastern Canada and the content tends to be primarily high quality beef. The exact breakdown of U.S. exports to eastern Canada are not known because of the nature of the trade classifications and because a very large portion of U.S. sales to Canada is ungraded. Thus it is never clear whether beef is from young finished animals or from older animals. The major reasons for the increased imports into eastern Canada are the substantial decline in the Eastern beef herd and in beef packing operations in eastern Canada.

Table C1. Canada's Imports of Beef From Offshore

		Relative To:			
	Absolute (Bil. cwt)	Low Quality Beef Production Canada	North America	Total Beef Production Canada	North America
1985	1.23	12.9%	1.3%	5.8%	0.5%
1989	1.44	14.5%	1.5%	6.5%	0.8%

Table C2. Canada's Net Trade in Live Cattle With the United States (Thous. Head)

	Cows and Bulls	Steers and Heifers
1981	77.3	-137.1
1985	112.3	-0.8
1989	181.2	164.7

Table C3. Canada's Imports of Beef From the U.S.

		Low Quality Beef Production:		Total Beef Production:	
	Absolute	Relative to:			
	(Bil. cwt.)	Canada	North America	Canada	North America
1985	0.43	4.5%	0.4%	2.0%	0.2%
1989	1.09	11.0%	1.1%	4.9%	0.4%

Canada. This likely reflects some competitive advantage in the west in live cattle production and the growing competitiveness of western U.S. packing plants. Canada's imports of U.S. beef are primarily to eastern Canada and the content tends to be primarily high quality beef. The exact breakdown of U.S. exports to eastern Canada are not known because of the nature of the trade classifications and because a very large portion of U.S. sales to Canada is ungraded. Thus it is never clear whether beef is from young finished animals or from older animals. The major reasons for the increased imports into eastern Canada are the substantial decline in the Eastern beef herd and in beef packing operations in eastern Canada.

- Table C2 shows the dimension of the trend in Canada's trade with the United States. Since 1981, Canada's net exports of cows and bulls to the U.S. have increased by 130%. Canada has moved from a position as a major net importer of steers and heifers to a position of a major net exporter. Thus, Canada shows evidence of being a competitive supplier of raw material.
- Table C3 contains Canada's imports of beef from the United States in both absolute and relative terms. Comparing this to the data in Table C1 indicates that Canada's imports from the United States have increased by three times as much as Canada's imports from offshore. The United States is now Canada's largest supplier of beef. When expressed as a share of Canada's production, the growth has been even more remarkable.
- Putting the last two points together, one can easily infer that while Canada is becoming a larger supplier of raw material, we are becoming a larger purchaser of finished products.
- Examination of world markets indicates that Canada is only the eighth largest producer of beef. Several countries are many fold larger producers, especially Brazil and Argentina. In recent years, those countries have shown more growth than has Canada or the world beef industry in general. Those two countries are currently precluded from access to much of the industrialized world because of foot and mouth disease restrictions.

Major opportunities in the future for Canada's beef industry include:

- The Japanese market, which is being liberalized through tariffication.
- The Korean market, which may open in the next few years and will likely continue to grow rapidly.
- The U.S. market, which is more available to Canada as a result of the Canada-U.S. Trade

The European Community, if Canada loses its domestic protection in the form of countervailing duties on European beef. The European Community has between 450,000 and one million tonnes of grinding beef in storage currently. While all of this beef would not meet Canadian health standards, the maximum level of imports from the EC before the countervailing duty was 22,000 tonnes.

To Examine the Effects of Alternate Levels of Offshore Beef Imports On the North American Market With and Without Tariff or Quantitative Restrictions by the U.S. on Canada's Exports

In order to achieve this objective, a review of literature is provided and a quantitative model of the North American beef industry is developed. The model includes consideration of high and low quality beef and of interaction among eastern and western Canada and the United States. The model is explained in Section 3.0.

The model is used to analyze 27 alternative policy scenarios reflecting restraints on trade between Canada and offshore markets or between Canada and the United States. Of these, 22 are related to the objective listed above.

Restrictions on trade with the United States are included in some scenarios for two reasons. The first is the possibility that the U.S. Meat Import Law could be reformulated as an equivalent tariff as a result of the current round of the GATT negotiations. The more important reason is the potential interaction between Canadian and U.S. trade policy. While Canada and the United States have exempted each other from their meat import laws, there are still legal potentials for trade restrictions on Canada's exports to the U.S (and vice versa). These include Article 704 of the Canada-U.S. Trade Agreement, which directly relates to a situation in which one country but not the other has imposed trade restrictions on a third country. The second is Chapter 11 of the Canada-U.S. Trade Agreement, which allows one country to impose import restrictions on the other when the second country's exports represent more than five or ten percent of the first country's imports. Canada's exports to the United States represent in excess of ten percent of total U.S. imports. Both of these clauses are consistent with GATT Article XIX, and both countries constantly reaffirm their GATT rights throughout the text of the Canada-U.S. Trade Agreement. Thus it is of critical importance to determine what the implications would be if Canada experienced a major increase in imports from an offshore source that was simultaneously facing trade restrictions in the United States. The conclusions from this segment of the analysis are as follows:

- Increased Canadian imports from offshore sources of up to 50 percent of historical net imports would have very little impact on the Canadian market. What impact is felt is felt on the prices of cull cows. This is the case when trade between Canada and the United States is free.
- If the United States imposes trade restrictions on Canada's exports, then significantly increased imports from offshore sources would have substantial impacts on the Canadian market.
- Similarly if the United States imposes tariffs on product from Canada, Canada would absorb almost all of the impact of the tariff, at least for low quality beef, assuming the tariff was placed on both low quality beef and cows. Otherwise it would likely cause Canada's export mix to change toward more live cattle and less beef.

To Develop Alternative Rules for Market Access Under Canada's Meat Import Act and to Analyze Their Economic Impacts

One of the issues in analyzing Canada's Meat Import Act is to determine whether the formula used to indicate the level of import quota is effective. In fact, the level of import quota is determined either by a formula, a global minimum access clause agreed to by Canada during the Tokyo Round of the GATT, an adjustment to the GMAC or by ministerial discretion. The formula consists of two components. The first is a production component, which increases the access to Canada's market by offshore sources Canada's production increases. The second is a female component, which reduces access to offshore sources as Canadian female slaughter increases. This is done to limit access during periods of beef herd liquidation. Concerns have been expressed as to whether the existing formula is sufficiently designed to simultaneously restrict access and to operate in a counter cyclical manner. Thus the remaining five policy scenarios address this issue. They analyze the effect of the existing formula, the U.S. formula if it was applied to the Canadian industry and a number of other alternative formulas. The conclusion of this analysis is that Canada's formula, as it currently stands, is as or is more effective than any others considered in both restricting access to the Canadian market, and in providing counter cyclical protection.

To Analyze the Relationship Between Canada's Global Minimum Access Commitment and the Formula of the Meat Import Act

As indicated above, Canada's Meat Import Act calls for the possibility of instituting quantitative restrictions based on either the formula or on Canada's Global Minimum Access Commitment. In turn, the GMAC has both a base and adjusted formula. The analysis was conducted to determine the relationship between the GMAC and the Canadian formula as well as between the GMAC and the actual level of imports.

The clear conclusions to this part of the analysis are two-fold:

- The formula embedded in the Meat Import Act has been essentially meaningless during the past decade because the GMAC always offers greater access to the Canadian market than does the formula. This is the case for both the GMAC and the adjustment thereto.
- Similarly, the GMAC has been largely irrelevant during the past decade because the actual level of imports has been substantially greater than the GMAC or its adjustment.

Policy Considerations

Section 5.0 of the report develops considerations for changing policy in Canada with respect to beef imports. It begins by summarizing the legal commitments and constraints that Canada faces. It then develops alternatives that Canada could follow based on the analysis.

The legal commitments and constraints that Canada faces can be classified into four categories: GATT commitment; CUSTA commitment; Canadian Law; and Canada's position in the Multi-National Trade Negotiations. Canada's GATT commitments consist of four components. The first is Article XIX, which allows a country to impose import restrictions that protect its producers against injury from imports that occur under unforseen circumstances. The second component is the GATT Subsidies Code under which countervailing duties may be imposed against subsidized imports from another country. The third component is the Global Minimum

Access Commitment that Canada negotiated in the Tokyo round of the GATT. It was discussed above. The final component of Canada's GATT Commitments is its responsibility to panel reports. Panel reports occur when a country has imposed import restrictions against unfairly traded products from another country. The exporting country has the right, under some circumstances, to appeal such decisions to a GATT panel. The process is defined in Section 5.0 and it is noted that panel decisions are not binding.

It is pointed out in Section 5.0 that all four of these commitments have implications for changing policy regarding beef imports. Canada's Meat Import Act can be classified as an Article XIX measure. Because of the requirements of Article XIX, Canada's law includes a large degree of Ministerial discretion in determining whether to impose import restrictions. Canada's beef industry is protected against imports from the European Community by a countervailing duty that was levied in 1986 because of European exports subsidies. This countervailing duty is to be reviewed in 1991. The Global Minimum Access Commitment is clearly of importance to this industry because it is specific to this industry. Finally, a GATT panel determined, on appeal, that the countervailing duty imposed by Canada against European beef was improper because the complaint was initiated by the Canadian Cattlemen's Association, who are producers of cattle and not of beef. Therefore, the panel concluded that the CCA does not have standing to bring such actions. Canada, to date, has not agreed to the adoption of the panel recommendations.

Canada's legal commitments under the Canada-U.S. Trade Agreement (CUSTA) are particularly important because of Article 704 and Chapter 11. Article 704 provides the basis for the mutual exemption by the two countries from each other's Meat Import laws. It also provides the basis for one country to reimpose trade restrictions on the other if the other is shown to provide a diversion from third countries when one country imposes import restrictions on third countries. Chapter 11 of CUSTA provides the basis for the two countries exempting each other from Global restrictions applied under Article XIX of the GATT. It also defines situations in which such exemption will not hold.

While some observers in the federal government feel that Article 704 and Chapter 11 provide ample protection of the Canadian industry against retaliatory actions by the United States, the authors of this report are not reassured. Section 5.0 contains an example of a situation which could occur soon in which the authors feel that the United States could erect protectionist boundaries against Canadian exports under both Article 704 and Chapter 11. Two of the authors have been heavily involved in countervailing duty trade disputes fought between Canada and the United States under U.S. law.

Two elements of Canadian law provide important components of the policy environment. The first is the large degree of Ministerial discretion about imposing trade restrictions on offshore sources of beef under the current Meat Import Act. The second is the Special Import Measures Act (SIMA), the domestic law under which the GATT Subsidies Code is administered. It is under this law that the countervailing duty against European beef was imposed by the Canadian International Trade Tribunal.

The final aspect of Canada's legal commitment is the fact that Canada's position in the Multi-National Trade Negotiation has been that voluntary restraint agreements should be outlawed. Canada goes on to suggest that VRA's should be replaced by tariff equivalents. This is important because the United States negotiates voluntary restraint agreements when offshore imports reach levels defined in the U.S. Meat Import Law. Canada has not used them in the past. Similarly, the United States does not provide for Ministerial discretion in limiting offshore imports as does Canada. This was discussed above. These two elements of the Canadian Meat Import Act make the Canadian process quite different from the U.S. process on controlling offshore imports.

The second part of Section 5.0 outlines alternatives that Canada could follow in regulating beef imports in the future. They are as follows:

Preserving the Status Quo

The Federal Cabinet would continue to invoke the Meat Import Act at its discretion and the Canadian International Trade Tribunal would continue to impose countervailing duties on unfairly traded products.

More Aggressive Use of the Existing Meat Import Act

In this alternative the Federal Cabinet would use a more restrictive definition of injury or potential injury to invoke import restrictions against offshore beef.

Revise or Amend the Meat Import Act

There are three potential areas of revision. One is to revise the formula in the Meat Import Act to omit American imports. The second is to amend the Act to reduce Ministerial discretion. The third is to change the access formula to be more consistent with the U.S. access formula.

Negotiate Voluntary Restraint Agreements

Canada could join the United States in negotiating voluntary restraint agreements when offshore imports reach levels defined by either the access formula in the Meat Import Act or levels defined by the Global Minimum Access Commitment. VRA's could also be developed in particular situations such as the one defined by the upcoming review of Canada's countervailing duty on European beef. Voluntary restraint agreements could also be negotiated to have two-way components. Such voluntary restraint agreements could be used to address multiple problems of international trade.

Tariffication of the Meat Import Act

Another alternative is to convert Canada's Meat Import Act to an equivalent tariff that would apply to all countries except the United States. This would allow Canada to protect its industry on the one hand, while honouring its commitment under the Canada-U.S. Trade Agreement to exempt the United States on the other.

Negotiate a Lower Global Minimum Access Commitment

Our analysis in Section 3.6 points out that the GMAC which Canada negotiated in the Tokyo round has consistently been greater than the access formula in Canada's Meat Import Act. Thus there is a clear inconsistency between the two. It is suggested that, with the commitment of Canada to exempt the United States from Canada's Meat Import Act, the GMAC should be renegotiated. It is suggested that the GMAC be based on recent levels of imports (post-CUSTA) from offshore sources. It is also suggested that the same formula could be used in the GMAC as is included in the Meat Import Act. Obviously, this could imply that the GMAC would be a maximum and a minimum.

Combination of Options

Two alternatives are suggested here. The first has the following components:

- amend Canada's formula to bring it in line with the U.S. formula, thereby not including U.S. imports as part of the formula
- negotiate a new Global Minimum Access Commitment in which the minimum formula in the GMAC is the same as the maximum formula in the Meat Import Act
- use the amended formula to signal the point at which voluntary restraint agreements might be negotiated
- reduce the scope for Ministerial discretion in the Act.

The second alternative is to simply join with the United States to change both countries' laws to impose a tariff equivalent to the joint effects of their current Meat Import Acts.

In assessing the alternatives defined above, there are four considerations that arise from the the analysis in this report that must be considered. First, it is clear to the authors that so long as the U.S. market is open to Canada, offshore imports to Canada do not cause injury to Canadian cattle producers. Second, the major growth in Canadian imports has not been from offshore, but rather from the United States. Third, Canada has exempted the United States from its Meat Import Act under the Canada-U.S. Trade Agreement. Fourth, the most important risk facing the Canadian industry from offshore imports is not the imports themselves, but rather the possibility that the United States would place trade restrictions against Canada because of the imports.

The implication of the foregoing is that the most important consideration in protecting the Canadian market against the real risks of offshore imports is to harmonize Canada's protection mechanism as much as possible with the mechanism in the United States. In this respect, most of the alternatives defined above would go far toward achieving harmony. The authors identify the alternatives of revising the Meat Import Act, negotiating voluntary restraint agreements, negotiating a lower Global Minimum Access Commitment, negotiating the first combined alternative defined above, and the alternative of joint tariffication as being potentially useful.

The economic analysis in Section 3.0 points clearly to the fact that the economic consequences of choosing among alternative access formulas are rather marginal. The economic consequences of not choosing an access formula that will harmonize with the United States, however, may be considerably greater than marginal. This was shown in Section 3.0 by analysing the effects on the Canadian market when imports from offshore increase and the U.S. restricts Canada's exports. It is for this reason that the preferred alternatives, in our view, are the ones that come closest to harmonizing Canada's policy with U.S. policy. Section 5.0 points out that, in our view, it is preferable to have an act with little Ministerial discretion. This is not because the authors have concerns about the ability of Ministers to make good decisions. Rather, it is because it is in the best interest of all business participants to understand exactly what the rules are and because, as Ministers change, so can their interpretations. In addition, some mild concern is expressed over a joint tariffication program, simply on the ground that one cannot forecast whether countervailing duty determinations in both countries would be resolved in the same way. If there was a divergence in countervailing duty decisions on subsidized exports from offshore, then disharmony could be introduced into even a harmonized tariff system.

Review of the Canadian Meat Import Act

1.0 Introduction

The effects of beef imports from offshore sources, such as the European Community (E.C.), Oceania, and more recently Nicaragua, have attracted the attention of Canadian cattle producers for some time. Since manufacturing quality beef from the E.C. was found to be subsidized and threatening Canadian cattle producers with material injury in 1986, imports from the E.C. have been subject to countervailing duties and have been virtually eliminated. Imports from New Zealand and Australia, which are also predominantly manufacturing quality beef, have received considerably less attention because they are perceived to be fairly traded. However, imports of Nicaraguan beef are perceived as a problem because they are sold by a state trading agency and could be entering the U.S. through Canada, either directly with a minimum amount of transformation, but more likely by displacing Canadian product. Given that the U.S. embargoed imports of Nicaraguan beef for political reasons, limits imports from the E.C. to 5000 metric tonnes per year through a voluntary restraint agreement (VRA), and continues to control imports of beef from New Zealand and Australia through its Meat Import Law, the possibility of Canadian imports from these sources displacing Canadian product into the U.S. market has been raised as an issue from time to time.

In addition to the effects of imports of beef from offshore sources, the Canadian cattle industry has also been concerned about ungraded U.S. beef entering the Canadian market, increasing concentration in the processing industry and the effects of regulations affecting the intra-North American beef and cattle trade.

The Canadian Meat Import Act imposes import quotas on the imports of fresh, chilled or frozen beef and veal under certain circumstances. Canadian imports of live cattle and calves are not subject to the Meat Import Act.

Under the Act, the Minister of Agriculture may with the concurrence of the Minister of Industry, Trade and Commerce)[1] impose quotas in December for the following year. The Minister may also adjust, suspend or revoke the quotas. In recent years the Minister of Agriculture has imposed quotas and immediately rescinded them, in order to have the option of quotas in place later in the year.

---

[1] Or under the current government organization, the Secretary of State for External Affairs, who delegates to the Minister for International Trade.

Voluntary Restraint Agreements (VRA's) may also be established with supplier countries. These agreements generally allow for less rigid restrictions than the quotas, and they can be rescinded or changed more easily than actual quotas. This option, however, does not appear to have been used by the federal government as a means of limiting beef imports.[2]

The Canadian Act requires the federal government to hold quarterly consultations with major meat suppliers in order to forecast exports of beef and veal to Canada from supplying countries, and to determine whether import quotas or other import limitations are required. The Act may not, however, restrict the amount of meat that is imported into Canada below the levels agreed to by Canada in the General Agreement on Tariffs and Trade (GATT).

While the Meat Import Act identifies a specific formula for calculating quota levels (based on a five year base average of imports, a three year average of domestic disappearance, and a five year average of domestic cow and heifer marketings), the Canadian Act includes several vague conditions that enable the Minister of Agriculture to set different import levels from those suggested by the quota formula. For example, import levels may be exceeded if the Minister of Agriculture (after consultation with the Minister of Industry, Trade and Commerce) determines that the supply of beef, veal and other meats in Canada is inadequate in relation to domestic requirements.

Additionally, any major changes in health measures or trade restrictions unrelated to the Canadian Meat Import Act can influence the import level decisions. The Minister of Agriculture is also given the freedom to consider any other factors that may be relevant in determining import levels.

The U.S Meat Import Law imposes quotas on beef and veal (as well as sheep and goat meat) being imported into the U.S., provided that the U.S. Department of Agriculture (U.S.D.A) predicts that imports are likely to exceed certain levels. The basic import level of 1,204.6 million pounds of beef and veal is provided for under the U.S. Law. Adjustments, similar to ones used in the Canadian Act, for production changes and counter cyclical factors are also taken into account.

---

[2] It should be noted that Canada seems to be more inclined to impose quotas and immediately rescind them, than to use Voluntary Restraint Agreements as the U.S. has done.

The U.S. Law is, however, enforced more stringently than its Canadian counterpart. For example, if any of the U.S.D.A.'s quarterly estimates of imports exceed 110 percent of the adjusted base quantity determined at the beginning of the year, the President is required to limit imports for the calendar year to the adjusted base quantity level but no less than 1,250 million pounds.

Given the requirements of presidential action, and the difficulties of changing import quotas mid year, the U.S. has been more apt to use Voluntary Restraint Agreements with major suppliers, and to avoid the need for quotas. This option enables the U.S. to allow imports of up to 10 percent more than required by the Law. In Canada, in contrast, it is possible to simply not invoke the Act, and let imports enter freely.

Under Article 704 of the Canada-U.S. Trade Agreement (CUSTA), either the U.S. or Canada can impose import restrictions on the other, but only in the situation where:

- one country has imposed import restrictions on a third country,
- the other party to the Agreement has not imposed similar restrictions, and
- imports into the first country from the second are seen to increase.

Both the U.S. and Canada are required to notify each other and to consult prior to taking any action to prevent such frustration.

Under CUSTA, Canadian exports to the U.S. are deleted from the calculations of the U.S. meat import quotas. The adjusted base quantity is thus reduced from 1,204.6 million pounds to 1,147.6 million pounds, and the minimum quota amount is reduced from 1,250 million pounds to 1,193 million pounds.

By deleting Canada from the quota calculations, however, it appears that even VRA's are unlikely to be needed by the U.S., and the likelihood of U.S. action against third countries is also reduced.

Under Article 1 of the GATT, a country's rules regarding importation and exportation must be granted equally to all GATT contracting parties. A caveat to this article is found in Article XXIV which allows for advantages to be accorded by any contracting party which enter into some type of "freer" trade arrangement with other countries. It is the intent of this Article, however, to encourage trade between two countries and not to raise barriers to the trade of other contracting parties.

Emergency actions limiting trade in such cases where unforeseen developments cause serious injury to domestic producers are provided for in Article XIX of the GATT.

While the main thrust of GATT is to provide balanced trading practices to all member nations, the GATT also provides numerous forms of protection for importing countries. Among these forms of protection, the GATT enables countries to take measures that will protect human, animal or plant life or health.

Both Canada's and the U.S. implementing legislation for the components of CUSTA that deal with the Meat Import Act state that the Act can be used against other countries only to the extent and for the period of time required to prevent frustration of restrictions on the quantity of meat being imported from an offshore source. However, both the U.S. and Canada retain their rights under the GATT, including those in Article XIX (the Escape or Safeguards Clause). Should the U.S. decide not to use their Meat Import Law, they can restrict imports under GATT Article XIX. However, unlike the Meat Import Law, injury (or threat of injury) must be proved and affected nations granted compensation. CUSTA eliminates Canada from this potential action, except where Canada is a significant supplier (five to 10% of imports) and where imports from Canada are contributing to the injury. As Canada supplies approximately 11% of U.S. Beef imports, we would not automatically be exempt. The above applies equally to Canadian imports from the U.S.

The above discussion suggests that the operation of Canada's Meat Import Act should also be consistent with Article XIX of the GATT. Article XIX requires that several conditions be met before action can be taken against imports and that the action must help the industry restore its competitive position. In order for Canada to apply legislation that limits meat imports in a manner that is consistent with the GATT, Canada must demonstrate that the competitive state of the industry has declined to the point where it is experiencing "serious injury". In addition, Canada must demonstrate that the proposed legislation will allow the industry to become "competitive" as a result.

1.1 Objectives of the Study

Given the foregoing policy considerations, the objectives of this study are:

1. to assess the nature and role of Canada's trends in beef in the Canadian and North American

markets

2. to examine the effects of alternate levels of offshore beef imports on the North American market with and without tariff or quantitative restrictions by the U.S. on Canada's exports.

3. to develop alternative rules for market access under Canada's Meat Import Act and to analyze their economic impacts

4. to analyze the relationship between Canada's Global Minimum Access Commitment and the formula of the Meat Import Act

2.0 International Trade and Trade Issues

In this section the nature of and trends in Canada's international trade in both cattle and beef are examined. This is followed by a discussion of the pertinent international trade issues and positions on them held by various participants in the sector.

Wherever possible, the description in this section is divided into discussion of high and low quality beef or their sources. This is done to explicitly recognize the separate nature of the two markets. High quality beef is produced from young steers and heifers and normally consists of steaks, roasts and derivative products. Low quality beef is that used for manufacturing and for hamburger. It results largely from the slaughter of cows and from low value components of steer and heifer carcasses. For the purposes of this analysis, the assumptions made to convert live animals into high and low quality beef are:

a) 100% of each cow or bull carcass is low quality beef;

b) 77.25% of each steer or heifer carcass is high quality beef, the remainder is low quality. When carcass weights are used, they are the Canadian equivalents. This means where U.S. data are concerned that a conversion is necessary. Our conversion factor to adjust U.S. to Canadian is .9122 of the U.S. carcass weight. The Canadian carcass weight is lower, in part, because Canada removes kidneys and leaf lard from the carcass. Moreover, Canadian carcasses tend to have slightly lower fat content. These assumptions are discussed more fully in Section 3.

2.1 International Trade in Slaughter Cattle

Table 2.1 contains data on Canada's trade in live cattle for slaughter for the period 1981 and 1985-1989. The data show Canada's exports, imports and net trade in both steers and heifers as well as cows and bulls. These are shown separately because of their relative contribution to high and low quality beef. The two series have somewhat different characteristics. Looking first at cows and bulls, it is apparent that Canada has always been a relatively large net exporter to the United States: Canada imports nearly no cows and bulls, but always exports. The most prominent feature of the data is that the net exports have increased markedly during the past decade. Canada's net exports of cows and bulls in 1989 was more than double the level of 1981.

Table 2.1 Canada's Trade in Live Cattle (Thousand Head)

		Exports	Imports	Net
1981	Steers and Heifers	15.2	152.3	-137.1
	Cows and Bulls	78.0	0.7	77.3
1985	Steers and Heifers	45.1	45.9	-0.8
	Cows and Bulls	113.1	0.8	112.3
1986	Steers and Heifers	99.3	45.9	51.4
	Cows and Bulls	59.3	3.3	56.0
1987	Steers and Heifers	109.4	57.9	51.5
	Cows and Bulls	70.5	2.6	67.9
1988	Steers and Heifers	226.9	27.1	199.7
	Cows and Bulls	147.8	3.2	144.6
1989	Steers and Heifers	202.1	37.4	164.7
	Cows and Bulls	183.8	2.6	181.2

For steers and heifers, a relatively different pattern emerges. In 1981, Canada was a net importer of over 137,000 head. By the late 1980's, Canada had moved to a net export position of in excess of 150,000 head. Data for 1990, indicate the trend is continuing.

What is not shown in the table is the regional origins and destinations. For cows and bulls, Canada's exports occur about equally between eastern and western Canada. The shares vary from year to year because western Canada's exports depend largely on the condition of the beef herd, while eastern Canada's exports result largely from the dairy herd. The dairy herd is more stable in size. On the other hand, more than 90 percent of Canada's exports of steers and heifers are from western Canada and more than 95 percent of Canada's imports go to eastern Canada. This pattern is a strong indication of the continental nature of the North American market for cattle and beef: slaughter cattle tend to move out of the U.S. midwest into Ontario to satisfy the eastern Canadian demand for beef, while western Canadian cattle move into the Pacific Northwest to satisfy that region's demand for beef.

The information on regional distribution completes an interesting picture of Canada's trade in slaughter cattle. Both regions of Canada tend to have increased their relative exports of live cows to the United States as Canadian slaughter capacity has declined. Western Canada has simultaneously increased its relative shipments of slaughter steers and heifers to the United States. However, there has not been a compensating increase in Eastern Canada's demand for American heifers and steers. Again, the latter point reflects the relative decline in Canada's, and particularly eastern Canada's, slaughter capacity.

2.2 International Trade in Beef

Table 2.2 contains Canada's imports of all beef by origin since 1979. The data reveal some interesting trends. First, while Australia and New Zealand are generally regarded as Canada's major suppliers of beef, the data reveal that there has been little growth in imports from those two countries. Second, there has been tremendous growth in imports from the United States. Simply using the change from 1981 to 1989 yields an increase of over 400 percent for the United States, compared to roughly 10 percent for the Oceanic countries. If we look at all offshore sources, the growth since 1981 has been roughly 50 percent. Hence, the data reveal quite clearly that the U.S. has been the major source of Canada's increases in imports.

The final point about the data in Table 2.2 is the growth in imports from Nicaragua. In 1989, Nicaragua exported nearly as much as did Australia. Table 2.3 contains Canada's imports until 1987 by category. After 1987, Canada went to the harmonized system and it is difficult to ensure comparability of the data. However, the data are sufficiently long to show some interesting trends. First, the United States has dominated category 11-01 with a nearly seven-fold increase in exports to Canada since 1980. This category is one in which the normal expectation is that the U.S. would nominate. It includes fresh, boneless beef. Category 11-03 is more likely to be dominated by off shore sources. It is frozen boneless product.

Table 2.2: Canada's Total Beef and Veal Imports by Country

	Australia	New Zealand	Ireland	Denmark	United States	Nicaragua	Other	Total
Quantity (CWT)								
1980	500925	538042	0	0	128129	0	0	1167096
1981	432917	500618	13266	16593	193237	2187	20568	1179386
1982	470399	498192	42655	34785	201290	4455	0	1251776
1983	330358	545695	148114	0	237511	16436	406	1278520
1984	296165	372532	385950	115592	440127	96990	765	1717121
1985	431629	510824	191287	55844	435491	42985	1278	1669338
1986	715739	454523	22201	4077	435457	34912	2121	1669030
1987	766589	571917	0	0	620049	74444	3059	2036058
1988	810960	586493	0	0	827296	201503	6132	2432385
1989	466937	523927	0	0	1085601	444007	1488	2521961
Value ($000								
1980	68442	74613	0	0	34240	0	0	177295
1981	55821	66446	1471	1971	52847	283	2	178841
1982	57820	61118	4701	3799	49777	698	0	177913
1983	42995	71663	15673	0	56273	2568	119	189291
1984	42657	51998	41956	13218	109236	18031	98	277194
1985	52029	86982	19036	5555	107974	4306	195	256077
1986	89272	57618	2426	456	106722	3430	303	260225
1987	91753	77905	0	0	150529	8106	777	329160
1988	109140	86261	0	0	194117	22944	921	413383
1989	67351	77977	0	0	253952	49430	210	448940

Table 2.3: Canada's Beef and Veal Imports by Type and Country (Quantity, cwt)

	Australia	New Zealand	Ireland	Denmark	United States	Nicaragua	Other	Total
11-01								
1980	3138	9909			68307			81354
1981	2846	10921			111539	238	6	125550
1982	323	992			114490			115805
1983		494			145784	29	7	146314
1984	1031	759		764	284063			286617
1985	633	2153			293544		171	296501
1986	251	2334		1339	297954			301878
1987	695	16644			440105	181		457625
11-03								
1980	462129	521592			15745			999466
1981	411903	486083	12864	13735		1949	20562	947116
1982	432739	493798	42655	34785	17694	4455		1026126
1983	311733	543497	145338		24217	16407	398	1041590
1984	279264	370912	384439	114409	39200	96990	765	1285979
1985	409803	507762	191193	52474	43436	42985	1107	1248780
1986	685684	450347	22201	2738	34443	34528	2121	1232062
1987	740719	555065			47520	74263	3059	1420626
11-05								
1980	6408	6395			18806			31609
1981		3602	402	2838	58153			64995
1982	5358	3052			61538			69948
1983	3751	1704	2776		63386		1	71618
1984	5572	643	1451	419	108872			116957
1985	4480	909			92285			97674
1986	3360	1842			91793	384		97379
1987	6274	208			124415			130897
11-08								
1980	29250	1046			25271			55567
1981	18168	12			23545			41725
1982	31979	350			7568			39897
1983	14874				4124			18998
1984	10298	218	60		16992			27568
1985	16713		94	3370	6206			26383
1986	26444				11267			37711
1987	18901				8009			26910

Category 11-05 contains fresh and frozen beef products with bone in. Here, as one would expect, the U.S. is dominant and has been increasing its shipments over time.

It might be expected that the high quality beef category falls in 11-05 and that 11-01 as well as 11-03 represent low quality or manufacturing quality beef. This is probably true, for the most part, of product from offshore. However, it is not likely to be true for the United States. Increasing amounts of high quality beef are being shipped to Canada with bone removed. Hence, the material included in categories 11-01 or 11-03 could represent quite a range.

Table 2.4 confirms that the U.S. product is something different than product from other countries. Table 2.4 is developed by simply dividing the aggregate value of each category in Table 2.3 by the level of imports from each country. This gives a general notion of the average price per unit of the imported product. Finally, all of the annual average unit values were converted to an index number based on the average for the category over the entire period of time. Looking at the U.S. values for both of categories 11-01 and 11-03, it is clear that the average values are considerably higher for the United States. As suggested above, this likely represents the fact that U.S. shipments into Canada are made up of a wide variety of cuts. Hence we may see both filet mignon and hamburger in the category. All this is confirmed in detail by Lutz and Sheer, who have done a careful study of Canada's imports from the U.S. by origin and destination and by type of product.

A second factor that is of interest in Table 2.4 is the relative unit values of Nicaraguan beef.

Note that, until 1985, Nicaraguan beef was priced at a level higher than the average for all countries (category 11-03). Subsequently, the average unit values for Nicaragua declined rather substantially. One can infer that the relative decline in unit values for Nicaraguan product is somewhat correlated with the increase in exports of Nicaraguan beef to Canada.

Table 2.4:Unit Values of Beef and Veal Imports Indexed to Unit Value for Imports from All Countries, 1980-89

	Australia	New Zealand	Ireland	Denmark	United States	Nicaragua	Other	Total
11-01								
1980	0.46	0.46			1.10			1.00
1981	0.52	0.50			1.06	0.51		1.00
1982	0.44	0.44			1.01			1.00
1983		0.57			1.00	0.85		1.00
1984	0.51	0.57		0.40	1.00			1.00
1985	0.49	0.70			1.00			1.00
1986	0.90	1.01		0.40	1.00			1.00
1987	0.62	0.80			1.01	0.36		1.00
11-03								
1980	0.98	1.01			1.27			1.00
1981	0.97	1.02	0.85	0.88		0.97		1.00
1982	0.98	1.01	0.91	0.90	1.45	1.29		1.00
1983	1.00	1.02	0.82		1.34	1.22		1.00
1984	1.05	1.04	0.81	0.85	1.69	1.38		1.00
1985	0.98	1.06	0.81	0.80	1.92	0.81		1.00
1986	0.98	1.00	0.86	0.91	1.78	0.78		1.00
1987	0.93	1.05			1.66	0.85		1.00
11-05								
1980	0.70	0.75			1.18			1.00
1981		0.74	0.74	0.84	1.03			1.00
1982	0.93	0.75			1.02			1.00
1983	1.03	0.88	0.69		1.02			1.00
1984	0.95	0.74	0.48	1.61	1.01			1.00
1985	0.76	0.88			1.01			1.00
1986	0.56	0.62			1.03	0.44		1.00
1987	0.87	0.78			1.01			1.00
11-08								
1980	1.05	1.08			0.94			1.00
1981	1.07	0.52			0.94			1.00
1982	0.97	1.11			1.16			1.00
1983	0.86				1.50			1.00
1984	1.65	0.64	2.34		0.97			1.00
1985	0.85		2.12	0.70	1.29			1.00
1986	0.91				1.22			1.00
1987	0.53				2.12			1.00

Table 2.5 contains Canada's exports by major destination and Table 2.6 contains the exports by category. The trade with Japan is interesting. It was relatively flat until 1989, and then increased rather substantially. This is likely associated with the loosening of Japanese trade restrictions. Canada's exports of beef to the United States have also grown. Merely relating the first and last years indicate an increase of about 70 percent. However, looking at the entire series suggests the growth rate has been substantially lower. The final bit of useful information is the relative growth of the various categories of beef. Canada's exports of beef in categories 11-01 and 11-05 have increased rather substantially during the period. Meanwhile, our exports of product under 11-03 have been stagnant to downward trending. Table 2.7 contains aggregate net exports for Canada. These data put the foregoing information into fairly clear focus. After an initial increase until 1985, Canada's net exports of beef to the United States have declined rather markedly. At the same time, Canada's net imports from other countries has shown a fairly stable increase over time. Putting the data all together, we see Canada moving from a modest net export position during the early 1980's to a net deficit position at the end of the

decade. The most dramatic change occurred in Canada's trade with the United States.

It is interesting to note that the earlier discussion of trade in slaughter animals indicated a major increase in Canada's exports. These data suggest a major increase in Canada's imports of beef. Thus the hypothesis that one must begin to work with is that Canada can be relatively competitive in the production of cattle, but is losing competitive advantage in slaughter and processing. The suggestion must be that Canadian packers are not able to bid for live slaughter cattle at prices that allow them to out-compete their U.S. competitors.

Table 2.5: Canadian Beef and Veal Exports by Country, 1980-89

	Quantity (CWT)			Value ($000)		
	Japan	United States	Total	Japan	United States	Total
1980	73217	918709	1003382	11293	109806	122886
1981	90824	1146562	1252204	14019	126140	142879
1982	60171	1228514	1335963	12720	138951	157648
1983	52610	1249407	1345185	7544	137714	150358
1984	52799	1616800	1711015	4943	463812	476162
1985	63293	1888418	1983267	13970	201233	218564
1986	61305	1700181	1789854	14901	180073	198444
1987	50897	1511775	1582153	12252	181176	196551
1988	53714	1421628	1510407	14764	153321	173124
1989	107354	1653397	1872623	26089	190220	234168

Table 2.6: Canadian Beef and Veal Exports by Country and Type, 1980-89

	Quantity (CWT)-------------			Value ($000)-------------------		
	Japan	United States	Total	Japan	United States	Total
11-01						
1980	1603	198988	200747	283	27640	27966
1981	396	305832	307397	14	40191	40404
1982	1944	373644	377969	465	48759	49579
1983	2083	385860	390112	303	49221	49935
1984	1510	470800	474736	279	57084	57705
1985	2168	698683	704005	461	85850	86683
1986	7828	720434	733477	1791	82928	85559
1987	6876	653905	664051	1678	81364	83822
11-03						
1980	69162	546339	621448	10642	62322	74233
1981	81782	600574	693319	12662	61323	76074
1982	53935	563862	654542	11368	60315	76220
1983	46114	521989	595638	6623	51191	60976
1984	47155	768605	848190	4134	369309	379750
1985	57170	536748	611533	12719	51828	66382
1986	50730	327574	392833	12681	31173	45335
1987	39822	243157	292646	9669	26026	36872
11-05						
1980	2452	165185	172043	368	18712	19363
1981	8646	239952	251068	1343	24592	26309
1982	4292	283437	295306	887	28970	30805
1983	4413	336123	353800	618	36601	38710
1984	4134	369309	379750	530	36443	37675
1985	3955	641767	656107	790	61920	63784
1986	2747	605035	614965	429	56936	58262
1987	4199	550125	560159	905	59943	61884
11-07						
1980		337	448		49	86
1981		40	110		11	30
1982		556	1508		64	215
1983		482	755		66	113
1984		2444	3016		306	459
1985		943	1373		172	237
1986		1085	1189		230	261
1987		9023	9211		1670	1740
11-08						
1980		8197	9144		1132	1324
1981		204	420		34	92
1982		7571	8146		907	1044
1983		5435	5635		701	737
1984		8086	8339		976	1032
1985		11220	11622		1635	1715
1986		47138	48579		9036	9288
1987		64588	65297		13843	13973

Table 2.7: Canada's Beef and Veal Net Exports by Country, 1980-89

	Quantity (CWT)-----------			Value ($000)-----------		
	United States	Other	Total	United States	Other	Total
1980	790580	-955194	-164614	75566	-129975	-54409
1981	953325	-880507	72818	73293	-109255	-35962
1982	1027224	-943037	84187	89174	-109439	-20265
1983	1011896	-945231	66665	81441	-120374	-38933
1984	1167673	-1173779	-6106	354576	-155608	198968
1985	1452927	-1138998	313929	93259	-130772	-37513
1986	1264724	-1143900	120824	73351	-135132	-61781
1987	891726	-1345631	-453905	30647	-163256	-132609
1988	594331.5	-1516309	-921977	-40796	-199463	-240259
1989	567795.9	-1217134	-649338	-63732	-151040	-214772

2.3 Cattle Slaughter in Canada

As a final backdrop to the foregoing discussion, Table 2.8 contains trends during the 1980's in Canada's slaughter of cattle by region. The most notable characteristic of the data is the precipitous decline in the slaughter of heifers and steers in eastern Canada. This decline has contributed to the trade patterns that were observed above. The decline from roughly one million head slaughtered annually to just over 500,000 currently is, on the surface, indicative of Ontario's inability to expand its beef herd and to compete for feeder cattle either in western Canada or in the United States.

It may be of value to discuss some of the factors affecting the relative competitiveness of the Ontario cattle feeding industry.

Ontario's cattle feeding industry was based traditionally on feeder cattle, half of which emanated from the Ontario breeding herd and half from Western Canada. Marketings of finished steers and heifers have declined by nearly half since their peak during the late 1970's, and Ontario appears to be able to support only one commercially viable packing plant. In the foreseeable future, it appears that Ontario will not be able to return to its former position of strength. The reasons are several:

1. The cow-calf industry in Ontario has always been and continues to be an economic enigma. Producers tend to be part time, either because they are really involved in non-agricultural employment (and live in the country where cows "look nice") or because they have rough pasture land on farms otherwise devoted to more intensive enterprises. All previous supply response analysis indicates that the Ontario cow-calf sector is the least responsive to changes in economic variables of any region in North America. The past half decade has been no exception, and there is no evidence to suggest a change in economic behaviour. Therefore, there is no reason to expect a marked increase in the size of Ontario's breeding herd.

Table 2.8

Summary of Federally Inspected Kill by Class by Province In 1981, 1985, 1989 (Adopted from Agriculture Canada Data)

Province	Year	Steers			Heifers			Cows			Bulls				
		1,000 Head	Provincial %	National %	1,000 Head	Provincial %	National %	1,000 Head	Provincial %	National %	1,000 Head	Provincial %	National %	1,000 Head	National %
B.C.	1981	34.3	50.0%	2.1%	19.1	27.8%	2.1%	12.0	17.5%	2.0%	3.2	4.7%	5.5%	68.6%	2.1%
	1985	44.0	46.9%	3.1%	23.6	25.2%	2.7%	19.5	20.8%	2.4%	6.7	7.1%	14.5%	93.8%	3.0%
	1989	40.4	46.4%	2.9%	18.8	21.6%	2.6%	21.3	24.5%	3.3%	6.6	7.6%	16.1%	87.1%	3.1%
Alberta	1981	643.2	49.7%	39.7%	457.1	35.3%	50.0%	183.5	14.2%	30.4%	11.0	0.8%	18.8%	1294.8	40.5%
	1985	592.7	46.7%	41.8%	436.6	34.4%	49.4%	233.7	18.4%	28.8%	7.4	0.6%	16.1%	1270.4	40.2%
	1989	701.4	55.2%	50.5%	369.0	29.0%	50.1%	196.1	15.4%	30.1%	4.7	0.4%	11.5%	1271.2	45.1%
Sask.	1981	75.0	36.8%	4.6%	54.9	26.9%	6.0%	68.3	33.5%	11.3%	5.6	2.7%	9.6%	203.8	6.4%
	1985	97.1	38.7%	6.8%	57.9	23.1%	6.6%	89.4	35.6%	11.0%	6.7	2.7%	14.5%	251.1	7.9%
	1989	149.9	47.5%	10.8%	67.4	21.4%	9.1%	91.4	29.0%	14.0%	6.8	2.2%	16.6%	315.5	11.2%
Man.	1981	161.6	54.3%	10.0%	69.2	23.2%	7.6%	62.6	21.0%	10.4%	4.4	1.5%	7.5%	297.8	9.3%
	1985	162.1	45.3%	11.4%	86.3	24.1%	9.8%	106.3	29.7%	13.1%	2.8	0.8%	6.1%	357.5	11.3%
	1989	61.5	54.1%	4.4%	36.2	31.9%	4.9%	15.1	13.3%	2.3%	0.8	0.7%	2.0%	113.6	4.0%
Ont.	1981	628.2	60.9%	38.8%	296.1	28.7%	32.4%	92.9	9.0%	15.4%	14.3	1.4%	24.5%	1031.5	32.3%
	1985	435.3	51.8%	30.7%	257.1	30.6%	29.1%	137.8	16.4%	17.0%	9.5	1.1%	20.6%	839.7	26.6%
	1989	368.7	53.2%	26.6%	220.2	31.8%	29.9%	97.1	14.0%	14.9%	7.5	1.1%	18.3%	693.5	24.6%
Que.	1981	55.3	21.8%	3.4%	8.0	3.1%	0.9%	171.6	67.6%	28.4%	18.9	7.4%	32.4%	254.0	7.9%
	1985	63.6	22.1%	4.5%	8.8	3.1%	1.0%	204.0	70.8%	25.1%	11.9	4.1%	25.8%	288.3	9.1%
	1989	38.3	14.3%	2.8%	13.6	5.1%	1.8%	203.1	75.8%	31.1%	12.8	4.8%	31.2%	267.8	9.5%
Atlantic Canada	1981	21.7	46.8%	1.3%	10.7	23.1%	1.2%	13.0	28.0%	2.2%	1.0	2.2%	1.7%	46.4	1.5%
	1985	23.6	40.5%	1.7%	12.7	21.8%	1.4%	20.9	35.8%	2.6%	1.1	1.9%	2.4%	58.3	1.8%
	1989	28.5	40.7%	2.1%	11.6	16.6%	1.6%	28.1	40.1%	4.3%	1.8	2.6%	4.4%	70.0	2.5%
Total	1981	1619.3	50.7%	100.0%	915.1	28.6%	100.0%	604.1	18.9%	100.0%	58.4	1.8%	100.0%	3196.9	100.0%
	1985	1418.4	44.9%	100.0%	883.0	28.0%	100.0%	811.6	25.7%	100.0%	46.1	1.5%	100.0%	3159.1	100.0%
	1989	1388.7	49.3%	100.0%	736.8	26.1%	100.0%	652.2	23.1%	100.0%	41.0	1.5%	100.0%	2818.7	100.0%
		Total													

2. A number of factors conspire to insure that Ontario producers will be hard pressed to compete for western feeder cattle. They include:

a. The increasing ability of U.S. cattle feeders to compete for western feeder cattle, perhaps as a result of the U.S. grain subsidy program;

b. The economic impact of CUSTA, which improves the economic value of north/south trade. Previously Ontario's higher price for finished cattle and the cost of moving them from the west relative to the cost of moving feeders gave Ontario an advantage in bidding for western feeder cattle. Now the greater relative value of cattle in the pacific northwest and competition from cattle and cuts from the US midwest in Ontario reduces this advantage.

c. Boxing, which reduces the cost of moving beef from western Canada to other North American markets. This underlines the advantage of western Canada in sourcing low priced feed grains and in climate, which reduces disease, the cost of shelter and, in the longer term, the environmental effects of intensive beef production.

d. The US farm bill and the Canadian corn countervail. The farm bill has encouraged the production of corn in the United States and soybeans in Ontario. This reduces the relative production of corn and makes the price of corn (and the opportunity cost of corn silage) more vulnerable to the full impact of Canada's countervail on corn. Countervail, according to the Canadian International Trade Tribunal, has had little real impact on prices of corn in most years. But when it has had an impact, it has been quite substantial. The risk of price change likely increases the reservation prices on the value of feeding corn to cattle. All of this works together to reduce Ontario's ability to compete for western feeder cattle.

e. Canada's Agricultural Stabilization Act, which tends to make corn more valuable if it is marketed than if it is fed. Since much of the Ontario cattle industry is corn based, the interaction between this grain policy and the beef industry is quite substantial. To the extent that the Agricultural Stabilization Act has recently guaranteed producers in Ontario corn prices that are at or above expected market levels, this can affect their decisions about how to market their corn (if corn is produced, since the US farm bill encourages them to produce soybeans). It can affect decisions about whether to make corn into silage or keep it as grain. If it is used for silage, it is clearly more likely to be used for cattle feed. Second, if corn is harvested as grain corn, the Agricultural Stabilization Act can encourage it to be marketed, rather than fed.

f. A number of provincial policies, most notably the Crow offset which provides subsidies to feeders in western Canada. These provide an advantage to westerners to outbid easterners for western feeder cattle.

3. Logic would suggest that Ontario could source feeder cattle from the southeastern United States. If, as argued above, Ontario cattle feeders cannot compete for feeder cattle in western Canada, then, a large supply of feeders is available much closer (from Kentucky, Tennessee, Virginia and West Virginia) then Ontario should be able to build a feed lot capacity from those cattle. However, two problems make this difficult if not down right unlikely. First blue tongue restrictions on movement of U.S. feeder cattle into Canada narrow the time window for imports without costly testing and quarantine procedures. Second, the U.S. grading system rewards fatter carcasses. This has encouraged development of types of cattle in the U.S. that are not consistent with the type that are most beneficial in Canada.

2.4 The International Beef Market

This section of the report deals with trends in the beef industries of those countries which are members of the International Beef Agreement and the influences that they have on the Canadian beef industry. In this review we have looked closely at total cattle inventories and international trade. Appendix 1 contains total cattle inventories for the 20 plus countries which report under the IMA regularly. The countries are ranked on the basis of the 1985 data. Countries with more than 10 million head and more than 50 million head are highlighted. Table 2.9 puts Canada's cattle herd into perspective. Canada's herd is eighth among IMA countries, but is roughly one-twelfth of Brazil and one fifth of fourth place Argentina.

The 1980's were generally a period of flat or negative growth in cattle numbers (Table 2.9). Since 1980, only five countries have experienced an increase in herd size of 2 percent or more while 15 experienced a decline of 2 percent or more. Even viewing the world industry since 1985, the general inference is the same: the international beef herd has declined. The major exceptions are Tunisia, Brazil, Rumania, and South Africa. In terms of size, only Brazil among those countries is a major player.

There is some evidence that the world beef herd is now beginning to rebuild. Cattle inventories increased from 1988 to 1989 in eleven countries.

Three additional countries report a small increase in 1990. They are significant: the U.S., New Zealand and the European Economic Community.

Within this group, six countries (Argentina, Australia, Brazil, the EC, New Zealand and Uruguay) are major net exporters of beef. It is worth noting that the exports of all but Uruguay have grown since 1985, and most at a more rapid pace than their growth in cattle numbers.

At the same time, the United States has experienced a decline in imports, thus decreasing its international demand.

Canada, on the other hand, has switched from being a net exporter to a net importer and the trend in net imports is increasing.

We would agree with observers such as the International Meat Council, that the international herd will continue to build over the next few years, albeit at a rate more moderate than occurred during the expansion phases of the beef cycles of the 1960's and the 1970's. This more moderate rate of expansion will be due to the continued weak demand for beef and the long period of poor economic performance for the beef sector. The immediate factors that should spur growth in the beef herd this year are strong cattle prices during 1990 and weakening feed prices.

In the short run, herd rebuilding will put downward pressure on slaughter levels as ranchers compete with packing plants for females. Over the longer run, of course, slaughter numbers will increase.

During the next few years, several factors will affect the international competitive environment of Canada's industry. They include:

a. The emergence of the "Big Three" packers in the United States, companies which have tremendous efficiency as well as merchandising and value adding capabilities. While slaughter levels are low they will continue to compete with Canadian packers not only for product markets, but also for cattle. As cattle numbers increase, the competition for cattle may be less intense if the fears of many in the U.S. materialize with respect to these companies exercising their market power to keep cattle prices low.

b. The opening of the Japanese market will attract product from at least Canada, the United States and Australia/New Zealand. It should be noted, however, that while import tariffs are being removed in Japan by 1992, Japanese beef producers will still be protected by a 70 percent ad valorem tax. Japanese trading practices will also continue to limit this potential market growth.

c. The possibilities of the Korean market being reopened will most likely attract Australian and New Zealand beef. In the short term this could mean less product from these countries coming into Canada and the U.S. In the long-term it is likely to spur further growth of these countries' herd sizes.

d. Canada may also face increased competition from a number of other countries in export markets or even encroachment into the Canadian market if some of these other countries can either meet or change existing health requirements. Based on the raw numbers and growth rates in export capability, the major potential competitors are likely to be Australia, Brazil, the EEC and Argentina. Australia and much of the EEC are particularly likely to become competitors as they are currently ranked as low risk countries for foot and mouth disease (See Table 4.1) and have either large amounts of product in storage (EEC) or a substantial production potential.

Table 2.9

World Cattle Numbers (000 hd)	1981	1985	1986	1987	1988	1989
a) Sorted by Total Herd Size						
Brazil	121597	126300	128925	131503	134133	136814
United States	124670	109749	105468	102118	99622	99180
European Community	77937	78766	83675	82750	80325	79390
Argentina	54000	54000	52500	51000	50300	49500
Columbia	24251	24000	23593	23030	23267	23267
Australia	25168	22784	23436	23667	23521	23887
Poland	11797	11055	10919	10523	10322	10733
Canada	12166	10980	10591	10802	10863	11016
Uruguay	11421	9402	9303	9945	10331	9583
New Zealand	8036	7921	8279	7999	8058	7721
South Africa	8353	7827	7828	7909	8198	8611
Romania	6485	6781	7077	7225	7182	7170
Yugoslavia	5474	5199	5034	5030	4881	4759
Japan	4385	4742	4742	4694	4667	4682
Austria	2535	2655	2655	2586	2541	2562
Switzerland	1954	1926	1902	1858	1837	1850
Hungary	1918	1901	1766	1664	1680	1680
Sweden	1939	1838	1715	1655	1662	1672
Bulgaria	1792	1751	1706	1678	1649	1613
Finland	1634	1567	1567	1434	1379	1346
Norway	1014	972	1000	995	979	985
Tunisia	583	637	661	666	670	696
b) Sorted by Growth Rate (1985-89)						
South Africa	8353	7827	7828	7909	8198	8611
Tunisia	583	637	661	666	670	696
Brazil	121597	126300	128925	131503	134133	136814
Romania	6485	6781	7077	7225	7182	7170
Australia	25168	22784	23436	23667	23521	23887
Uruguay	11421	9402	9303	9945	10331	9583
Norway	1014	972	1000	995	979	985
European Community	77937	78766	83675	82750	80325	79390
Canada	12166	10980	10591	10802	10863	11016
Japan	4385	4742	4742	4694	4667	4682
New Zealand	8036	7921	8279	7999	8058	7721
Poland	11797	11055	10919	10523	10322	10733
Columbia	24251	24000	23593	23030	23267	23267
Austria	2535	2655	2655	2586	2541	2562
Switzerland	1954	1926	1902	1858	1837	1850
Bulgaria	1792	1751	1706	1678	1649	1613
Argentina	54000	54000	52500	51000	50300	49500
Yugoslavia	5474	5199	5034	5030	4881	4759
Sweden	1939	1838	1715	1655	1662	1672
United States	124670	109749	105468	102118	99622	99180
Hungary	1918	1901	1766	1664	1680	1680
Finland	1634	1567	1567	1434	1379	1346
c) Sorted by Growth Rate (1981-89)						
Tunisia	583	637	661	666	670	696
Brazil	121597	126300	128925	131503	134133	136814
Romania	6485	6781	7077	7225	7182	7170
Japan	4385	4742	4742	4694	4667	4682
South Africa	8353	7827	7828	7909	8198	8611
European Community	77937	78766	83675	82750	80325	79390
Austria	2535	2655	2655	2586	2541	2562
Norway	1014	972	1000	995	979	985
New Zealand	8036	7921	8279	7999	8058	7721
Columbia	24251	24000	23593	23030	23267	23267
Australia	25168	22784	23436	23667	23521	23887
Switzerland	1954	1926	1902	1858	1837	1850
Argentina	54000	54000	52500	51000	50300	49500
Poland	11797	11055	10919	10523	10322	10733
Canada	12166	10980	10591	10802	10863	11016
Bulgaria	1792	1751	1706	1678	1649	1613
Hungary	1918	1901	1766	1664	1680	1680
Yugoslavia	5474	5199	5034	5030	4881	4759
Sweden	1939	1838	1715	1655	1662	1672
Uruguay	11421	9402	9303	9945	10331	9583
Finland	1634	1567	1567	1434	1379	1346
United States	124670	109749	105468	102118	99622	99180

2.5 Issues

With the foregoing discussion on international trade in cattle and beef as a backdrop, the following issues are of concern to the industry and to this study.

First, a fundamental issue is the impact of the imports of off-shore beef on the Canadian and North American markets. This is of importance for a number of reasons. Chief among them is that the need for and the effectiveness of a meat import act is predicated on determining the effects of imports on the market and the effects of reducing them. In addition, the future may unfold in a very different way from the past for this sector. There is some possibility that a GATT agreement will harmonize standards, particularly for health. If this is the case, a number of countries which have been kept out of North American markets by hoof and mouth disease restrictions could be allowed in. In the foregoing section, the size and importance of the beef industries in some of these countries, particularly Brazil and Argentina was noted. Finally, in 1991 there is potential for an end to Canada's countervailing duty on imports of beef from the European Community. At present there are roughly 450,000 metric tones of surplus beef in storage in the EC. As data in this section have indicated, Canada's largest year of imports from the EC was 22,000 metric tons. The European Community has a voluntary restraint agreement with the United States that limits EC exports to approximately 5,000 tons per year. It is, therefore, of value to estimate the economic impacts of a relatively major increase in imports from off-shore.

A second issue has to do with the repeated calls by the Canadian Cattlemen's Association for changes in the Canadian Meat Import Act. Cattlemen have been among the most strident voices advocating more limited access to the Canadian manufacturing beef market. They propose amendments to the existing Meat Import Act to give controls and market access quotas using a system that parallels the current U.S. Meat Import Law. Canadian cattle producers are on public record as being strongly and categorically opposed to high levels of imports of off-shore manufacturing beef. Interestingly, they seem to have no objection to imports of high quality beef from the U.S. which, as was shown above, are growing at an almost geometric rate. At the same time, they are very supportive of a free two-way continental trade in slaughter and feeder cattle. This position appears to be based largely on cattlemen's perceptions that strong U.S. demand for Canadian feeder and fat cattle is beneficial to the Canadian primary production sub-sector. This is entirely consistent with the frequently iterated CCA position that the North American beef market is "continental" in nature and that unimpeded and "free" trade with the U.S. cattle and beef is fundamental to the well being of the Canadian cow-calf and feeding sub-sectors. However, the Canadian Cattlemen's Association and several similarly aligned provincial groups argue that Canadian imports of off-shore manufacturing beef at significantly higher per capita levels than permitted under the U.S. Meat Import Law injures both the primary production and primary processing sectors.

The third issue has to do with changes in the legislation of both Canada and the United States as a result of the Canada - U.S. Trade Agreement. In that agreement, both countries agreed to exempt each other from its own meat import act. The United States has followed up by changing the basis on which allowable imports are calculated. This entails dropping Canada's exports from the formula. Canada has, to date, done nothing to change its basis for calculating allowable imports. Furthermore, there is particular concern about the global minimum access formulas to which Canada agreed some years ago. This will be explained in more detail in Section 3.0. However, it is sufficient to say at this point that a major concern is that Canada gave its minimum access based on 1980, one of the years of the past decade during which per capita beef consumption was highest. Given that the minimum access is based on consumption, the guaranteed access is, by today's standards, rather generous.

The final issue is related to the foregoing. While the U.S. agreed in the Canada - U.S. Trade Agreement to exempt Canada from its Meat Import Act, there are other aspects of the Canada - U.S. Trade Agreement which may nullify the exemption. In particular, Chapter 11 of the Canada - U.S. Trade Agreement appears to give the U.S. the right to limit imports of a product from Canada when Canada's import share represents more than five to more than 10 percent of total U.S. imports. One could infer that this would be a particular risk if Canada is doing something that is perceived to abrogate U.S. policy in other areas. For example, the discussion above indicates that there is a risk of increased imports to Canada from the European Community, while the Europeans have a voluntary restraint agreement with the United States. One could easily visualize a situation in which the U.S. would impose import restrictions on Canadian beef if it was perceived that the Europeans were using Canada as a "back door" for the U.S. market. Back door, in this context, is a term that is well known to people in Canada's beef industry because the U.S. has used it often in the past. Hence it is of interest to determine what the impacts on the Canadian industry would be of relatively unrestricted access by off-shore exporters to the Canadian market while the Canadian market has explicitly restricted access to the U.S. market.

3.0 Impact of Offshore Imports and of Alternative Formulations of the Meat Import Act

This section contains an analysis of the effects of imported beef on the market for beef, and of a number of policy scenarios that could effect the level of imports in Canada and/or North America. This analysis is undertaken in order to provide information about the issues identified at the ends of sections 1.0 and 2.0.

This section contains seven subsections. In the first, literature is reviewed to discuss previous studies that have examined the effects of imports. The second presents additional detail about the North American beef industry. The third combines the information from the literature review with facts about the North American market for beef to contribute to the development of the model which is used in the analysis for this project. The model, its assumptions, the approach used in solving it are explored in the fourth subsection.

The fifth subsection contains a description of the policy scenarios analysed in the study. The following subsection contains the results of the quantitative analysis. The final subsection is an assessment of the guaranteed minimum access agreement that Canada has made at the GATT.

3.1 Review of Literature

The literature reviewed in this study has two parts. The larger investigates work that has dealt with the effect of beef imports into Canada on prices and trade. The second addresses issues having to do with the U.S. Meat Import Law, but that have tangential bearing for the present study.

A fundamental issue in analysing the effects of imports to Canada is the relationship between the U.S. and Canadian markets (whether the market is for cows, slaughter cattle or cuts of beef). Because of the relative size of the Canadian market, its role in determining North American prices is of paramount importance in conducting such an analysis and, therefore, in developing the type of model that is used for the analysis. Canadians involved in international trade between Canada and the United States in red meats have become familiar with the notion of an export floor or an import ceiling. These concepts arise from the classical spatial equilibrium model which argues, in essence, that for homogeneous commodities the continental price level is jointly determined by the supply and demand of both countries and the price at a point in Canada relative to some point in the United States can vary in a range from transfer costs under the U.S. price to transfer costs over. If Canada has sufficient supply relative to its demand to be an exporter, then Canada's price would be at the lower end of the range, known as the export floor. Similarly, if Canada's supply relative to its demand is such that Canada is importing product from the United States, then Canada is said to be at the import ceiling.

Given the relative size of the markets, the only circumstance under which the Canadian market would have a major impact on Canada's relative price for a commodity is that its supply changes sufficiently to move it from the export floor or the import ceiling. Otherwise, changes in Canadian supply would affect U.S. prices by the same amount as Canadian prices. Of course, for products that are not homogeneous, the range between the floor and ceiling is affected by the quality characteristics that make one country's product different than the other. In theory, however, even with heterogeneity, there should be some functional relationship that is related to quality characteristics as well as transfer costs.

By implication, the foregoing asserts a relatively stable floor or ceiling. This assertion arises from the implied assumption that transfer costs are constant. However, there are circumstances (partially explained in an unauthored and undated treatise by the Canadian Cattlemen's Association) under which the floor or ceiling may not be constant. This is most apparent for the export floor. Thus the remainder of this explanation will focus on it. Let us assume that there is a substantial increase in Canada's supply of cattle or beef and that Canada is already at the export floor. This means that Canada is already exporting beef to the United States. Now as the Canadian market becomes even more saturated with a greater supply of product, Canadian marketers look for merchandising opportunities to move the product. There are a number of scenarios that can occur which would cause some dampening of Canadian prices relative to those in the U.S. The clearest is the circumstance under which transfer costs increase as the quantity exported increases. We are being careful to use the term "transfer" costs here instead of transportation costs because transportation theory suggests that the two are different. Transfer costs include transportation as well as other costs involved in moving product.

As a greater quantity must be exported, there are additional costs involved in searching out new markets and in developing new merchandising opportunities. Similarly, given a relatively fixed short term supply of transportation facilities, there may be an increase in transportation rates as quantities increase and/or there may be additional problems of delay, demurrage and spoilage. Finally, since prices are observed at finite points but trade occurs over much less finite space, a relative decline in Canadian prices may simply be a reflection of the fact that Canadian product must move further to be able to compete with American product.

Whether the export floor is stable or is related, in some way, to the level of exports has an impact on the effect that Canadian imports will have on Canadian prices. If one assumes that the export floor is stable, then an additional tonne of supply in Canada will affect the price in both Canada and the U.S. by the same amount. The only issue of interest is how much of the product will stay in Canada and how much will be exported. If the floor, on the other hand, is sloped then additional product in Canada will lower the price in Canada by more than in the United States.

The available literature on this subject is not very clear. One of the earlier pieces of work was done by Lattimore and De Gorter of Agriculture Canada in 1980. The authors discuss the notion of an export floor and provide a substantial amount of data that suggest the export floor is relatively stable for the Canadian beef industry. In fact, their conclusion is fairly straight forward:

> The current access provided Canadian cattle producers in the U.S. places a tight band on possible variation in Canadian prices, regardless of variations in off-shore imports. (p.4)

However, five years later, the Canadian Cattlemen's Association sought relief from European imports by bringing a countervailing duty action against those imports. The CCA argued that, in fact, the floor is not stable. They found support in two studies by Agriculture Canada, one by Charlebois and the other which is undated and anonymous. Both argue that the CCA position was correct. Charlebois' analysis addressed the impact of an increase of 25 million pounds in 1985 and 23 million pounds in 1986. He also analysed the impacts of no imports from the EC. Anonymous analysed the effects of increased imports from the EC of 76 and 99 million pounds. It also addressed the situation with no imports from the EC. Both studies estimate the effect of EC beef prices on Canadian cow prices to be at or above $5/cwt or in excess of 5 percent of value. Both apparently used the then current version of the FARM model.

The study by Anonymous gives no explanation of the underlying model that was used or the assumptions that were used to obtain this result. Charlebois does discuss some assumptions and some of the procedures used in his analysis. However, there is no discussion of the functional relationships contained in the model at that time nor of exactly how the analysis was conducted. After several readings of both papers, it is simply not clear how the results were obtained. There are only two possibilities. The first is the work implies that the North American market is efficient and that transfer costs increase with the volume traded. The second is that the analysis assumes the North American market is not efficient and that Canadian prices are discovered independently from the U.S. In the absence of proof in the two papers, and in the presence of considerable evidence to teh contrary in other work, we simply do not accept either hypothesis.

The final studies are by Martin and van Duren and by van Duren. Martin and van Duren conducted the analysis of injury and threat of injury for the Canadian International Trade Tribunal (CITT) in the EC beef case. Their analysis, because of time limitations, was relatively cursory. van Duren subsequently spent considerably more time and used more sophisticated analytic techniques. The results of the two analyses are nearly identical despite the different methodologies. In their analysis, Martin and van Duren estimated statistically a set of equations for the U.S. and Canada that related price differences in the two countries to the volume traded. Their results showed that, even with EC imports at 100 million pounds, the effect on cow prices would be less than $4/cwt. At levels more consistent with those of Charlebois and the anonymous study, effects on cow prices were between $1.50/cwt and $2.70/cwt.

The CITT did not find compelling the argument that imports from the EC were injuring the Canadian cattle industry.

It is interesting to note that work in the United States has estimated very small effects of offshore imports on cattle prices. There was a very substantial controversy about the effects of imports during 1976 and 1977 when U.S. (and Canadian) beef consumption was at record high levels per capita. This was, of course, because domestic slaughter was at record high levels as were imports. These two years represented the largest reduction in the North American and world beef herds of history. Not surprisingly, a number of studies were done to guage the impact of these exports and also, not surprisingly, the major impact in those studies was on the price of cows. Hence the remainder of this discussion will focus on that variable. Davis summarizes the results of four studies which addressed the effect of increased imports on prices during that period. These studies were done by Farris and Graeber, Rausser and Freebairn, Folwell and Shapouri and Ehrich and Usman. These studies conclude that the effect of increased imports in 1976 and 1977 ranged from $1.08/cwt to $1.91/cwt for cull cows. Naturally, the effects on steers were smaller. Freebairn and Rauser went further and estimated the effects of different levels of beef imports. The maximum affect of 700 million pounds per year on the price of cull cows was $3.82/cwt.

Viewing the foregoing studies together gives a fairly interesting conclusion: with the exception of the studies by Charlebois and anonymous, no one has found that the effects of imports into either Canada or the United States have material implications for the prices of even cull cows. As was indicated, the work of neither Charlebois nor anonymous explained in any detail at all how the results were obtained. Moreover, our best estimate is that they were obtained using the wrong approach.

Several studies have been completed recently regarding the economic impact of issues surrounding the U.S. Meat Import Act. In the first, the staff of the United States International Trade Commission analyzed the tariff equivalent of the variable export restraints that have been agreed to by supplier countries in the past few years.[1] They found that the VER's represented equivalent ad valorem tariffs of 1.6% in 1987 and 6.1% in 1988. The Australian Meat and Livestock Corporation also commented on the same issue without giving any indication of it's methodology and asserted that the tariff equivalents were 1.5 to 3%.[2]

Finally, Sparks Commodities analyzed the formula that the United States uses to calculate its minimum access to the U.S. market and argued that the formula was flawed.[3] The areas of criticism were that the formula takes into account all beef, not hamburger beef, and that it takes into account production and not consumption of hamburger beef. Sparks feels that since Australian grinding beef is not substitutable for high quality fed beef in the United States, then the formula is unduly restrictive. Sparks also criticized the formula on the ground that the counter cyclical component (reflecting female slaughter) offsets the production component and, therefore, gives little opportunity for increased access.

---

[1] United States International Trade Commission, The Economic Effects of Significant U.S. Import Restraints, Phase II: Agricultural Products and Natural Resources, USITC Publication 2314, Washington, D.C. 20436, September 1990

[2] To comments of the Australian Meat and Livestock Corporation on the Economic Effects of Significant U.S. Import Restraints on Imports of Agricultural Products, The Meat Import Act, United States International Trade Commission, Washington D.C., 20436, February 1990

[3] Sparks Commodities, Incorporated, The Impact of the 1979 Meat Import Act on the U.S. Cattle and Beef Industries, Washington Division, McLean, Virginia, February 1990

All of these studies are flawed. The USITC and Australian studies (apparently) did not take into account the fact that there are two qualities of beef. They treated beef as a homogeneous product. It is simply incorrect in this market to assume that Australian beef is perfectly substitutable for U.S. beef, at least to the extent that U.S. beef includes high quality product from fed steers and heifers. Moreover, both studies are flawed on the ground that they took the world price as given in calculating the tariff equivalents of the variable restraints. Given the extremely large share that the U.S. represents of total world trade in beef, one would expect that U.S. actions might have just a little impact on the price level. Therefore, removing the action and not adjusting for its impact on the world price level must, without question, give the wrong answer.

While Sparks is quite correct in arguing that grinding beef should be the basis for assessing the Meat Import Law, their other assertions are questionable. In particular, to the relative effects of the production and counter cyclical components must surely be a function of the period of time over which the data are analyzed. Most likely their work included the last three or five years, a time during which there was very little variation in either. If one is going to have both a production or consumption and counter cyclical component to the triggering mechanism, then any triggering mechanism is going to give different results when there are different rates of growth. Moreover, it is not at all clear that a formula that would take into account consumption instead of production would be more or less restrictive than the current U.S. formula. In fact, as will be revealed in Section 3.6.2 the current Canadian formula for guaranteed access is based on consumption instead of production and is more restrictive to the United States than its own current formula.

These studies reveal the need for an analytic approach to the current analysis that contains a number of elements. First, the analysis must include both high and low quality beef. Second, since there are supply responses to any changes in prices, it must be dynamic. To incorporate these components, Section 3.3 presents a model of the North American beef industry which is used then to analyze a series of policy alternatives.

3.2 Some Aspects of the North American Beef Industry

As discussed previously, beef in North America is usually considered to be one of two types. The first is high quality or block beef, which is the product that finds its way into supermarkets or the hotel, restaurant and institutions (HRI) trade as fresh beef cuts. For the most part, high quality beef is produced from steers and heifers. The second category is low quality or grinding beef. This is the product that finds its way into hamburger, sausages and other preparations. It comes from cows and bulls, from trim on heifers and steers and from off-shore imports.

In practice, there is some departure from the foregoing generalizations regarding the sources of high and low quality beef, especially in that the loins from good quality cows can be used to produce steaks that fall in the high quality category. Furthermore, a small portion of imports from off-shore can go into the high quality category. However, for purposes of this study, and in consultation with industry experts such as Abraham and Associates, the allocations are as follows:

- Cow and bull carcasses are 100 percent low quality
- Heifer and steer carcasses are 77.25 percent high quality and 22.75 percent low quality. These are the proportions used by Agriculture Canada
- Imports of product classified as carcasses or bone-in are 100 percent high quality
- Imports of product that are boneless are 100 percent low quality.

The foregoing allocation procedures result in the quantities of high and low quality beef produced by Canadians and Americans that are shown in Table 3.1. The data indicate several things about the relative levels of beef production in the two countries. First, Canada's production of high quality beef has averaged just under 9 percent of U.S. production. Conversely, Canada's production of low quality beef has run at almost 11 percent of U.S. production. The difference represents a relatively greater importance of the dairy herd in Canada. It also gives one indication of the reason Canada is a major net exporter of low quality beef to the United States.

Another factor that emerges from the table is the relatively greater growth in high quality beef production in Canada than in the United States during this period. U.S. high quality beef production peaked in 1985, while it peaked in 1989 in Canada. Canada's growth from the low point of 1986 to 1989 was about 7 percent while U.S. growth was about 5.5 percent.[4]

Table 3.1 **Estimated High to Low Quality Beef Production, Canada and the U.S., 1985-1989 (Bil. lbs.)**

Year	High Quality		Low Quality	
	Canada	U.S.	Canada	U.S.
1985	1.19	14.00	0.96	9.07
1986	1.14	13.00	0.97	8.88
1987	1.21	13.60	0.96	8.84
1988	1.21	13.49	0.98	8.88
1989	1.22	13.72	0.99	9.08

Another difference in the beef marketing systems of the two countries is reflected in their apparent seasonality. Table 3.2 contains the ratios of beef production in each quarter to the average quarterly production per year. The results show that Canada's beef sector is more seasonal than the U.S. sector for both high and low quality beef. Canada's high quality beef production in the first quarter is only 90 percent of the quarterly average. During the last two quarters, Canada's high quality production is seven percent greater than the average. While the United States has eight percent more production in the third quarter than the average, the general pattern in the U.S. data is much more stable than Canada's. Similarly, Canada's seasonality is clearly greater for low quality beef production than is the case for the United States.

Table 3.3 brings Canada's beef imports into perspective. It contains Canada's imports of beef from various countries or regions expressed as a percentage of domestic production. The import data used to calculate these percentages are those that were discussed in Section 2.0. The first set of entries in the table shows Canada's imports as a share of total domestic production of beef. The second set show the imports as a percentage of Canada's domestic production of low quality beef. The final two sets of entries **Table 3.2**

---

[4] It should be noted that these calculations are based on marketings and not necessarily on slaughter. Therefore, the Canadian figure represents the amount of beef produced from Canadian cattle, not necessarily in Canadian packing plants.

Table 3.2 Beef Production Relationships - Ratio of Quarter to the Average (1985-1989)

	High Quality		Low Quality	
	Canada	U.S.	Canada	U.S
I	0.90	.97	0.98	1.00
II	0.95	1.00	0.99	1.02
III	1.07	1.08	1.08	1.00
IV	1.07	0.96	0.95	0.98

show Canada's imports as a percentage of North American total beef production and North American low quality beef production.

The data show a number of significant facts. First, Canada's total imports have been increasing relative to domestic production. This is true whether one looks at domestic production of all beef or just low quality beef. Imports have risen to a level equivalent to one-fourth of Canada's low quality beef production.

The second fact is that the shares of Canada's two traditional major suppliers have not changed materially during the past five years: the shares of Australia and New Zealand were nearly the same in 1989 as in 1985. Third, the share of Denmark and Ireland declined to zero following Canada's imposition of the countervailing duty in 1986.

The fourth factor is the growth of Nicaraguan beef. In 1989, Nicaragua's share was essentially the same as that of Australia and New Zealand. It should be noted that Nicaragua's exports to Canada declined both absolutely and as a percentage of domestic production in 1990. Finally, it is quite clear from these data the extent to which U.S. beef has penetrated the Canadian market. The U.S. share in 1989 was more than twice the share of the second largest exporter to Canada. Again, the data suggests a very rapid growth rate in the U.S. share of Canada's market.

Table 3.3: Trade as a Share of Canadian and North American Total and Low Quality Beef Production

As Share of:		Imports							
		Australia	New Zealand	Ireland	Denmark	United States	Nicaragua	Other	Total
Canada Total	1985	2.0%	2.4%	0.9%	0.3%	2.0%	0.2%	0.0%	7.8%
	1986	3.4%	2.1%	0.1%	0.0%	2.1%	0.2%	0.0%	7.9%
	1987	3.5%	2.6%	0.0%	0.0%	2.9%	0.3%	0.0%	9.4%
	1988	3.7%	2.7%	0.0%	0.0%	3.8%	0.9%	0.0%	11.1%
	1989	2.1%	2.4%	0.0%	0.0%	4.9%	2.0%	0.0%	11.4%
Canada Low Quality	1985	4.5%	5.3%	2.0%	0.6%	4.5%	0.4%	0.0%	17.4%
	1986	7.4%	4.7%	0.2%	0.0%	4.5%	0.4%	0.0%	17.3%
	1987	7.9%	5.9%	0.0%	0.0%	6.4%	0.8%	0.0%	21.1%
	1988	8.3%	6.0%	0.0%	0.0%	8.4%	2.1%	0.1%	24.8%
	1989	4.7%	5.3%	0.0%	0.0%	11.0%	4.5%	0.0%	25.5%
North America Total	1985	0.2%	0.2%	0.1%	0.0%	0.2%	0.0%	0.0%	0.7%
	1986	0.3%	0.2%	0.0%	0.0%	0.2%	0.0%	0.0%	0.7%
	1987	0.3%	0.2%	0.0%	0.0%	0.3%	0.0%	0.0%	0.8%
	1988	0.3%	0.2%	0.0%	0.0%	0.3%	0.1%	0.0%	1.0%
	1989	0.2%	0.2%	0.0%	0.0%	0.4%	0.2%	0.0%	1.0%
North America Low Quality	1985	0.4%	0.5%	0.2%	0.1%	0.4%	0.0%	0.0%	1.7%
	1986	0.7%	0.5%	0.0%	0.0%	0.4%	0.0%	0.0%	1.7%
	1987	0.8%	0.6%	0.0%	0.0%	0.6%	0.1%	0.0%	2.1%
	1988	0.8%	0.6%	0.0%	0.0%	0.9%	0.2%	0.0%	2.5%
	1989	0.5%	0.5%	0.0%	0.0%	1.1%	0.5%	0.0%	2.6%

		Exports			Net Exports		
		Japan	United States	Total	United States	Other	Total
Canada Total	1985	0.3%	8.8%	9.2%	6.7%	-5.3%	1.5%
	1986	0.3%	8.0%	8.4%	6.0%	-5.4%	0.6%
	1987	0.2%	7.0%	7.3%	4.1%	-6.2%	-2.1%
	1988	0.2%	6.5%	6.9%	2.7%	-6.9%	-4.2%
	1989	0.5%	7.5%	8.5%	2.6%	-5.5%	-2.9%
Canada Low Quality	1985	0.7%	19.7%	20.7%	15.1%	-11.9%	3.3%
	1986	0.6%	17.6%	18.5%	13.1%	-11.8%	1.2%
	1987	0.5%	15.7%	16.4%	9.2%	-13.9%	-4.7%
	1988	0.5%	14.5%	15.4%	6.1%	-15.5%	-9.4%
	1989	1.1%	16.7%	18.9%	5.7%	-12.3%	-6.6%
North America Total	1985	0.0%	0.7%	0.8%	0.6%	-0.5%	0.1%
	1986	0.0%	0.7%	0.7%	0.5%	-0.5%	0.0%
	1987	0.0%	0.6%	0.6%	0.4%	-0.5%	-0.2%
	1988	0.0%	0.6%	0.6%	0.2%	-0.6%	-0.4%
	1989	0.0%	0.7%	0.7%	0.2%	-0.5%	-0.3%
North America Low Quality	1985	0.1%	1.9%	2.0%	1.4%	-1.1%	0.3%
	1986	0.1%	1.7%	1.8%	1.3%	-1.2%	0.1%
	1987	0.1%	1.6%	1.6%	0.9%	-1.4%	-0.5%
	1988	0.1%	1.5%	1.6%	0.6%	-1.6%	-1.0%
	1989	0.1%	1.7%	1.9%	0.6%	-1.2%	-0.7%

It is interesting for further perspective to look at Canada's imports as a share of North America's total and low quality beef production. Including U.S. imports, Canada's total imports are only one percent of North American beef production; and 0.6 percent when only offshore imports are considered. Canada's total imports are equal to 2.6 percent of Canada's low quality beef production. Deducting the U.S. share yields the conclusion that offshore imports are 1.5 percent of North American low quality beef production. It is similarly interesting to note, given the concern expressed about Nicaraguan imports, the relative weight they carry in the North American market. They represented one-half of one percent of North American low quality beef production at their peak in 1989. Table 3.4 contains the imports by the United States from various countries as a percentage of U.S. total beef production. These data show there has been little change in U.S. imports during the past five years. Total imports have been fairly constant at from five to seven percent of domestic production. There has been little change in the shares of exporting countries. These data also reveal that Canada's exports to the United States have been at or above 10 percent of total U.S. imports during these five years.

Table 3.4 U.S. Beef & Veal Imports As a Share of U.S. Beef Production

	1989	1988	1987	1986	1985
Australia	3.3%	4.7%	4.3%	4.0%	3.4%
New Zealand	2.6%	2.6%	2.6%	2.2%	2.3%
Canada	1.0%	0.8%	0.9%	1.0%	1.1%
Central America	0.5%	0.7%	0.6%	0.7%	0.7%
All Other Countries	0.0%	0.1%	0.1%	0.1%	0.1%
Total Beef and Veal	7.4%	8.8%	8.4%	7.9%	7.5%
All Countries minus Canada	5.8%	7.3%	6.9%	6.3%	5.9%

3.3 The Model

The model developed to analyze the impacts of imports into North America is designed to reflect many of the factors discussed in the two foregoing sections. First, there are two types of product in the beef sector: high and low quality beef. It also is designed to reflect the fact that, in general, low quality beef is substitutable no matter what its origin and that the same holds for high quality beef. Finally, it reflects the fact that the Canada-U.S. market is spatially efficient. This means that prices tend to differ across space by no more than transfer costs and that transfer costs are not, over any expected volume, related to the volume shipped.

The last characteristics especially given the discussion in Section 3.1 regarding the possibility of a sloping export floor deserve some explanation. It has been claimed by a number of people that either Canadian and U.S. products are not closely substitutable for each other and/or that price differences between the two countries are related to the volume shipped. A set of fairly simple tests can be conducted to examine these claims. The first is to determine whether price movements for similar products are the same in the two countries. This can be done by regressing the price in one country on the price in another over some period of time. This we have done for steers, heifers and cows. Of course, the regressions also include an exchange rate variable. The results are presented in Table 3.5 with prices at Toronto regressed on Omaha and Texas for steers and heifers and Omaha and Lancaster, Pennsylvania for D3 cows.[5] The results show that all of the estimated regression coefficients are close to one. When a statistical test is conducted to determine whether regression coefficients are different than one, the hypotheses are unanimously rejected. Furthermore, all of the F-statistics are significant at a very high level of confidence. Hence, it can be argued on statistical grounds that steers, heifers and cows are quite substitutable between Canada and the United States. Since steers, heifers and cows are used to produce high and low quality beef in the two countries, it certainly should follow that the products which are made from them are also substitutable.

Additional work was done to determine whether price differences are related to the volume traded. This was done by regressing monthly price spreads (in Canadian funds) for wholesale beef in Canadian and U.S.

---

[5] For further information see the section on like product in the annex to this report on the competitive state of the beef industry.

markets on the quantity traded between the two countries during the past two years. The procedure was similar to that used by Martin and van Duren as reported in Section 3.1, except the analysis was broadened. It was conducted using both linear and quadratic specifications of the quantity variables. The results are reported in Table 3.6. Variables include exports of both beef and cows. It can be seen that none of the linear specifications show any statistical significance as judged by the t-statistics. The quadratic specification did on occasion show significance as judged by the t-statistics. However, the highest of the F-statistics for these equations is just over 2.0. Therefore, none of the regression equations can be accepted. There is no evidence that price differences are related to volumes traded. Therefore, we judge that it is acceptable to analyze the impacts of international trade and trade policies in the beef industry by using a spatial equilibrium model. The model developed for the analysis is described below.

Table 3.5 Regression of Prices in Canada and the U.S., Toronto and:

	Omaha Steer	Texas Steer	Omaha Heifer	Texas Heifer	Omaha (Boneless) D3 cows	Lancaster D3 Cows
Coefficient	1.07	1.16	0.97	1.01	0.81	0.82
t-statistic	7.02	6.54	5.83	6.16	5.04	11.23
$\bar{R}^2$	0.73	0.71	0.72	0.72	0.52	0.45
F-statistic	50.50	23.19	48.30	47.13	12.85	15.88

Table 3.6 Relationship Between Price Spreads and Volume Exported

Price Spread - Canada-Calgary, Wholesale Low Quality Beef in Canadian Funds

	Variables	t-Statistic	$\bar{R}^2$	F
1.	Beef Exports	1.08	0.07	1.17
2.	Cow Exports	0.84	-0.01	0.72
3.	Cow Exports Beef Exports	0.39 0.76	-0.03	0.64
4.	Beef Exports Beef Exports^2	1.57 -1.44	0.05	1.66
5.	Cow Exports Cow Exports^2	2.00 1.84	0.09	2.08

The analysis was conducted using a "synthetic" model of the North American beef sector. A synthetic model was chosen over an econometric model because, in our opinion, an econometric model simply cannot reflect the changes in parameters that would be necessary with the changes in trade policy analyzed here. Most econometric models require the use of price linkage equations that cannot handle the discontinuities of major changes in tariffs or in import quotas. Another alternative would have been to build a recursive quadratic programming model. This alternative was rejected on the ground that the synthetic model is simpler and can be written in a spreadsheet for a micro computer with results that are essentially identical to those of a quadratic programming model, given that the direction of trade flows is not altered by any policy change.

This simulation model is quarterly and is based on a set of assumed elasticities. It is simulated over a 20 quarter base period during 1985-89. The parameters were assumed as follows:

Demand

The demand elasticities are based on preliminary econometric work carried out by the study team. Initially, we estimated the demand for high and low quality beef. In this analysis, we used prices as the dependent variables. The elasticities used in the simulation model are very similar to the ones estimated for the United States in the econometric analysis.

The assumed price elasticities are contained in Table 3.7. As can be seen, it is assumed (based on the econometric work) that low quality beef has a lower own elasticity than does high quality beef. Second, it is assumed that high quality beef has a greater cross effect on low quality beef than vice versa. This result is very clear in the econometric analysis. Moreover, from the demand side, it would seem logical to expect that consumers would be more prone to substitute high quality product for low quality as price changes than vice versa.

Based on the assumed elasticities, the individual parameters of the model were generated from the actual data during 1985-89. Three approaches to their generation were considered. The first was to force the demand functions to yield the precise price and quantity observations for each quarter by adjusting the parameters on every demand relationship. This could not be pursued because it forced unreasonable

Table 3.7. Assumed Price Elasticities for High and Low Quality Beef

Elasticity of Demand for:	Price of:	
	High Quality	Low Quality
High Quality	-0.65	0.20
Low Quality	0.30	-0.50

supply relationships. The second was to calculate the parameters from the actual data for each quarter during 1985 and then use these as starting values for the remainder of the simulation. This approach led to some fairly major errors in validation because 1985 was very different in its price and quantity relationships than the other four years of the simulation period.

The third alternative, and the one adopted, was to calculate the starting values for the simulation from the average prices and quantities during 1985-89.

We initially attempted to make annual adjustments for population and income. However, the econometric analysis revealed a negative relationship between income and demand for both high and low quality beef during the past decade. At the same time, population growth has not been very high in either country. Thus it was assumed that the population and income effects offset each other.

Marketings

The model includes supply relationships for the marketings of cows and bulls and of steers and heifers.

As with the demand relationships, a great deal of time was spent during the project in attempting to estimate parameters for marketings of cows and bulls and of steers and heifers. The econometric work showed in general that during the 1980s, North American beef production displayed almost no response to economic variables. In other words, there is little evidence that beef cattle inventories, marketings of steers and heifers or marketings of cows and bulls were affected by changes in cattle prices or input prices during this period of time. There are probably two reasons for this result. The first is that the decade was one of relatively constant prices and relatively constant beef production. Since the data have little variation in them, it is not likely that one will find much response to variation. The second reason is that a host of factors affected the industry during this period. They include: a major economic recession, uncertainty about interest rates, relatively low feedgrain prices, except during short-lived periods of substantial increases, and, perhaps most importantly, waves of negative publicity about beef and beef production practises and their possible consequences for human health. The decade was not a happy one for most beef producers and, in our view, is the most uncertain period that has been faced by this industry. Hence, it is not surprising that the industry showed little response to changes in economic variables.

Our choice, because of the foregoing, was either to simply ignore supply response relationships in conducting the analysis or to choose a set of synthetic parameters. On the ground that the industry has certainly been responsive to economic variables in other decades, it was decided to incorporate a supply response system. The basis for the assumptions about the parameters for the supply response system was the research done during the late 1970s by Martin and Haack. The price elasticities of supply from Martin and Haack were reviewed and, in most cases, the elasticities were reduced marginally. This was done because the econometric analysis with data from the 1980s indicated that there has been less price responsiveness on the supply side.

The short term elasticities for the equations are reported in Table 3.8. Marketings of cows and bulls are assumed to be a function of the price of feeders, on the ground that breeding stock are held because of their expected long term profitability. The earlier econometric work suggested that western Canada was the most responsive region, followed by the U.S. It also suggested that eastern Canada's beef herd has never shown much responsiveness to prices. Thus the elasticities were assumed as shown.

Heifer and steer marketings are assumed to be a function of steer prices lagged three quarters. Martin and Hack used polynomially distributed lags to explain the price relationship. The largest positive response in that work occurred during the third to fifth lagged quarters and the aggregate supply response in each region was not very large. For this model, then, it was assumed that the short run elasticities are all in the order of 0.2.

In addition to price variables, all of the marketing equations in the simulation model include a lagged dependent variable. Again looking at Martin and Haack, coefficients on all the lagged dependant variables tended to be in the range of 0.6 to 0.8. To reflect a slightly lower responsiveness during the 1980's, these were scaled back somewhat and/or held in the lower end of the range. Coefficients for the cow and bull equations were set at 0.4 for both regions of Canada and 0.6 for the United States. Coefficients for all three regions were set at 0.6 for the heifer and steer equations.

Table 3.8 Assumed Price Elasticities for Cow Marketing Equations

Region	Cow and Bull Marketings-Feeder Price (-2Q)	Heifer and Steer Marketings-Steer Price (-3Q)
Eastern Canada	-0.05	0.2
Western Canada	-0.30	0.2
U.S.	-0.20	0.2

Starting values of the parameters in the simulation model were obtained by using the elasticities and coefficients discussed above in conjunction with the actual data for the first year of the simulation period. The parameters were then held constant throughout the rest of the simulation.

Feeder Cattle Prices

In order to generate feeder cattle prices (which are necessary in the cow and bull slaughter equations), they were linked through a price transmission equation to steer prices. Reviewing Martin and Haack, it was found that the short run elasticities were lower in Canada than in the U.S. and lower in eastern Canada than in western Canada. Hence the short run elasticities are as shown in Table 3.9. The relationship is assumed to be geometrically lagged and the coefficient on the lagged dependant variable is 0.6 for all regions. Starting values were calculated in the same manner as for the marketing equations discussed above.

Table 3.9. Assumed Elasticity of Price Transmission for Feeder Cattle

Region	Steer Price (-1Q)
Eastern Canada	0.30
Western Canada	0.50
U.S.	0.60

Processing Linkages

In the model it is necessary to convert live cattle to beef. The assumptions used are outlined in Table 3.10. Following Agriculture Canada's approach, we have assumed that 77.25 percent of each heifer and steer carcass goes to high quality beef, while the remainder goes to low quality beef. We have also assumed that 100 percent of cow and bull carcasses go to low quality beef. Carcass yields are assumed to be 58.5 percent for heifers and steers and 48 percent for cows and bulls. Where necessary, U.S. carcass weights are converted to Canadian equivalents (and all quantity calculations are done in Canadian carcass equivalents) using a factor of 0.9122. This is done to reflect the fact that U.S. carcasses include leaf lard and kidneys, while these are removed from Canadian carcasses and to reflect the slightly higher fat content of U.S. cattle. Actual average carcass weights during the simulation period were used in the model.

Table 3.10. Assumed Processing Linkages

	%
High Beef from Heifers and Steers	0.7725
Low Beef from Heifers and Steers	0.2275
Low Beef from Cows and Bulls	1.00
Carcass Yields - Heifers and Steers - Cows and Bulls	0.585 0.48
Canadian Carcass to U.S. Carcass	0.9122

A final set of data required for the model is transportation costs. These were obtained from industry sources and range from $5 to $6 per cwt. depending upon origin, destination and product.

3.4 Solving the Model

For the base simulation and policy scenarios in which an open border between Canada and the United States is assumed, the following steps are used in solving the model:

1. The aggregate quarterly demand function for all of North America is calculated, based on the parameters discussed above.
2. Marketings of cows and bulls and heifers and steers are calculated for each of eastern Canada, western Canada and the United States, based on the parameters discussed above. These cattle are converted to high and low quality beef, as discussed above.
3. Net imports of beef between the rest of the world and each of Canada and the United States are added to supply. Canada's net imports are allocated between the two regions on the basis of population.
4. The aggregate North American supply is combined with the aggregate demand function to determine U.S. prices for wholesale carcasses. These are then linked, using transportation costs to calculate prices in eastern and western Canada. Demand is allocated among the three regions based on population.
5. Carcass prices are used in conjunction with the yield factors discussed above to calculate steer and cow prices. Steer prices are used, in turn, to generate feeder prices through the price linkage equation.
6. Intra-North American trade is calculated by subtracting the predetermined quantities supplied in each region from the post determined quantity demanded.
7. Prices generated in the first and succeeding quarters are used through the lagged supply relationships to determine in a recursive manner the marketings in subsequent quarters.

The structure of the model has a number of implications for the results of the analysis, largely because its parameters are fixed. For example, the conversion factors from live cattle to beef are fixed and are the same for both Canada and the United States. By implication, this means that packing house margins are also fixed. The annex to this report on the competitiveness of the beef industry suggests this is not true. But it also suggests that the reasons are many and subtle. Thus, while it would be relatively easy to change the conversion factors in this, or any, deterministic model, there is no way to do so correctly.

The implication of the foregoing is that the model, while yielding quantities in pounds of beef, essentially treats beef and cattle as technical units. It is not possible to say, in a given situation, what portion of trade would occur as cattle and what portion as beef. Unless one is enamoured of the numbers that emanate from economic models, especially with attempting to obtain a degree of precision that is usually unattainable, this does not present a real problem. The data on Canada-U.S. trade presented in Section 2.0 show undeniably that the trend has been for Canada to export its raw product (cattle) and to import the value added product (beef) from the U.S. The annex on competitiveness presents a number of potential reasons for the trend. Hence, when we use the model to simulate a scenario in which Canada imports X million units of low quality beef from offshore and the result is that Canada exports Y million more units to the U.S., then it seems sensible to assume that a fair portion of those will have hooves! For those who want a precise count of the hooves, the reality is that there is nothing in the data or the preliminary econometric analysis to suggest it is possible to adequately specify a model that will account properly for both live cattle and beef. What's important is that Canada exports a large amount of low quality beef and cows to the U.S. The Canada-U.S. border is relatively free of trade barriers. More beef in Canada will mean more Canadian exports to the U.S.

This aspect of the model has been an ongoing concern for at least one member of the Steering Committee of this project. Despite the fact that the Steering Committee, on several occasions, approved the methodology reported here, one member still is critical of the fact that the model does not separate cattle from beef. It was the intention of the project to do so. However, the implication of the foregoing discussion about how the model was developed means that it was not possible to do so. The project team spent over two and half months attempting to estimate from secondary data a set of equations that could be used to represent all of the aspect of this market. The results are simply not satisfactory to use. The equations resulted in coefficients that were not statistically significant. They had wrong signs. The structural implications were such that had we used them, there would have been no impact of anything.

It is acknowledged that this is a limitation of the model. This is why we have written this section. It is also acknowledged that the U.S. Meat Import Law is operated so that it restricts imports of beef but not of cattle. Once again, we also reiterate that with a little common sense, it is usually possible to tell from the results of this model and the policy scenarios that are analyzed in it, when the cattle will go by hoof and when they will go on carcass. At least, we should be able to tell when the trend will change.

The foregoing leads to a second implication of the model. By its nature, one must force Canada to be at the export floor or the import ceiling. Our assumption, which is perfectly consistent with the rather overwhelming evidence that Canada exports low quality beef and cows to the U.S., while importing high quality beef from that country, is that Canada is at the export floor for low quality and that the import ceiling for high quality.

It is granted that short term situations arise that may make this assumption invalid for one or two quarters. Therefore, the individual quarterly solutions of the model were checked thoroughly to determine whether there is evidence of switching from the floor or ceiling in some of the policy runs. The result is that such activity is negligible.

Finally, we have assumed constant transportation costs - i.e. a stable floor and ceiling. As indicated above, this is because the available evidence suggests they have been stable during the 1980s. However, even if the export floor for low quality beef was sloped as was found by Martin and van Duren in 1986, the impact would be negligible compared to the clear and substantial implications that arise from what is reported below.

Values of the actual variables pertaining to the Canadian beef sector are presented and summarized in Table 3.11.

Table 5.11: Values of Variables Pertaining to Canada's Beef Sector (Starting Values)

Calculated Prices:

	Low Quality Beef $/cwt		High Quality Beef $/cwt		Steers & Heifers $/cwt		Cows & Bulls $/cwt		Feeder Cattle $/cwt	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
1985-1	106.69	105.69	131.17	130.17	77.13	76.13	62.81	61.81	86.90	84.74
2	93.48	92.48	122.38	121.38	71.96	70.96	55.04	54.04	79.91	80.03
3	84.81	83.81	117.26	116.26	68.97	67.97	49.94	48.94	74.57	86.25
4	106.01	105.01	140.18	139.18	82.44	81.44	62.46	61.46	80.29	88.10
1986-1	119.57	118.57	150.73	149.73	88.63	87.63	70.39	69.39	81.81	85.17
2	131.40	130.40	159.65	158.65	93.87	92.87	77.36	76.36	80.41	86.37
3	96.35	95.35	137.34	136.34	80.78	79.78	56.74	55.74	82.71	105.88
4	109.12	108.12	147.23	146.23	86.58	85.58	64.29	63.29	89.41	106.13
1987-1	101.91	100.91	133.43	132.43	78.46	77.46	60.00	59.00	88.54	98.15
2	106.28	105.28	140.74	139.74	82.75	81.75	62.57	61.57	81.31	88.77
3	86.91	85.91	124.09	123.09	72.99	71.99	51.18	50.18	79.27	98.31
4	113.77	112.77	141.36	140.36	83.13	82.13	67.02	66.02	84.55	97.87
1988-1	100.43	99.43	135.71	134.71	79.80	78.80	59.13	58.13	84.57	91.39
2	99.71	98.71	141.25	140.25	83.05	82.05	58.70	57.70	79.34	85.43
3	95.35	94.35	128.32	127.32	75.47	74.47	56.15	55.15	76.20	96.49
4	108.79	107.79	139.26	138.26	81.89	80.89	64.09	63.09	84.80	98.34
1989-1	103.73	102.73	135.73	134.73	79.81	78.81	61.07	60.07	84.35	91.03
2	103.24	102.24	141.38	140.38	83.12	82.12	60.78	59.78	73.21	85.22
3	96.36	95.36	125.09	124.09	73.57	72.57	56.75	55.75	78.14	96.41
4	101.18	100.18	128.05	127.05	75.30	74.30	59.61	58.61	84.09	97.10
Average	103.25	102.25	136.02	135.02	79.98	78.98	60.80	59.80	82.12	92.26
1	106.47	105.47	137.35	136.35	80.76	79.76	62.68	61.68	85.23	90.10
2	106.82	105.82	141.08	140.08	82.95	81.95	62.89	61.89	80.04	85.16
3	91.96	90.96	126.42	125.42	74.36	73.36	54.15	53.15	76.58	96.27
4	107.77	106.77	139.22	138.22	81.87	80.87	63.49	62.49	84.63	97.51

Quantity Supplied:

	Steers & Heifers (000 head)		Cows & Bulls (000 head)		High Quality Beef (millions lbs.)		Low Quality Beef (millions lbs.)		Offshore (Low)		Intra North America (Absolute Value)	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
1985-1	189.3	375.3	106.1	163.1	90.8	180.0	87.0	145.7	-22.0	-384.5	40.2	98.5
2	174.5	431.5	122.8	167.1	83.7	207.0	85.1	153.9	-21.6	-455.3	25.5	103.7
3	203.9	438.6	120.8	115.3	102.1	219.6	101.5	161.9	-39.7	-597.4	55.8	94.6
4	199.0	425.5	85.0	123.8	98.8	211.4	97.6	127.6	-23.4	-559.2	29.8	46.0
1986-1	176.7	344.3	100.6	169.5	87.5	170.5	85.4	150.7	-13.9	-397.4	39.8	88.1
2	160.1	397.9	120.9	170.0	77.9	193.6	82.6	157.5	-27.4	-297.4	62.9	86.2
3	192.9	417.9	120.2	116.6	97.5	211.1	100.4	163.0	-35.4	-625.0	58.0	78.2
4	197.8	425.2	84.7	121.8	97.3	209.2	98.6	129.4	-20.7	-501.3	29.5	42.3
1987-1	185.7	364.8	100.0	157.5	93.1	182.9	87.9	149.1	-21.2	-481.6	36.4	86.9
2	170.3	423.4	119.9	153.3	83.3	207.0	84.3	155.1	-30.9	-522.4	44.6	82.3
3	201.0	437.7	119.2	102.8	102.0	222.1	101.6	156.9	-43.0	-686.8	52.5	80.8
4	197.9	426.3	84.1	113.9	101.7	219.0	101.0	125.7	-24.5	-428.9	43.0	40.9
1988-1	180.8	355.0	100.0	157.8	93.2	182.9	89.2	151.4	-23.1	-538.2	38.7	82.3
2	164.2	408.8	120.3	158.3	82.5	205.3	86.2	158.2	-27.8	-614.5	37.4	79.5
3	195.7	425.2	119.7	108.1	101.9	221.4	102.9	161.2	-24.5	-581.6	48.5	79.7
4	195.3	420.3	84.5	117.9	101.7	218.8	101.7	129.2	-16.0	-456.6	32.7	41.1
1989-1	179.4	351.6	100.2	160.6	91.9	180.1	89.1	152.5	-20.3	-426.3	40.9	88.3
2	164.4	409.5	120.4	159.5	81.7	203.4	85.6	158.5	-24.4	-523.7	38.4	84.5
3	195.2	424.4	119.8	108.8	102.4	222.6	103.1	162.2	-19.1	-488.2	48.0	84.8
4	195.1	419.8	84.5	118.4	108.2	232.8	104.0	134.1	-13.6	-463.2	33.6	33.8
Average	186.0	406.1	106.7	138.2	94.0	205.0	93.7	149.2	-24.8	-500.5	42.0	75.2
1	182.4	358.2	101.4	161.7	91.3	179.3	87.7	149.9	-20.1	-441.6	35.2	88.8
2	166.7	414.2	120.9	161.6	81.8	203.3	84.8	156.7	-26.4	-462.6	42.6	87.3
3	197.8	428.8	119.9	110.3	101.2	219.4	101.9	161.0	-33.2	-595.5	52.6	83.6

Table 3.12 contains the solutions to the base model indexed to the actual values. In order to ensure the correctness of interpretation, note the third entry of the table under U.S., across from "Average" is 1.06. This means the price of low quality beef in the U.S. which was generated in the model is six percent higher than the actual U.S. price.

3.5 Policy Scenarios Analyzed

A total of 27 policy scenarios have been analyzed to determine their impacts. They are summarized in Table 3.13. They are categorized into six sets.

Set A is designed to determine the impact of current levels of trade on the North American industry. This set begins with an assessment of the effects of all offshore net exports to North America, to Canada, to the U.S. and the effects of Nicaraguan exports to Canada.

Set B addresses the effects of altering the rules to trigger imports under the meat import acts of Canada and the United States. As was previously explained, both countries use a formula that has two components. The first (the production component) adjusts imports in direct proportion to domestic production, in the case of the United States, or domestic consumption in the case of Canada. The second component (the female component) adjusts imports inversely to female slaughter in each of the two countries. In Canada's case, there is an additional consideration of a guaranteed minimum access that was agreed to in GATT. It will be considered in Section 2.7. The five scenarios (5 through 9) in this set analyze the impacts of various trigger mechanisms. In the first two, each country's formula is applied to both. In the third the current formulas are applied. This scenario is analyzed because neither country has imposed restrictions under its meat import law to the extent possible with the TABLE 3.11 formulas in several recent years. The final two scenarios in this set use alterations of the two countries' trigger mechanisms. The alternatives analyzed here were chosen from a larger set which examined different rules for imposing the import quotas. This set and its implications for imports are outlined in Table 3.14 which contains the ratio of the quantities that would be allowed into each country with each formula, compared to the actual imports in each year. Thus when the U.S. formula is applied to the U.S. in 1989, the formula would have allowed 2% more imports than actually occurred.

Table 3.12: Index of Base Run Over Actual

	Prices: Low Quality Beef $/cwt			High Quality Beef $/cwt			Steers & Heifers $/cwt		
	EC	WC	US	EC	WC	US	EC	WC	US
1985-1	1.21	1.35	0.97	0.86	0.93	0.89	0.88	0.93	0.89
2	1.03	1.14	0.88	0.84	0.93	0.88	0.87	0.91	0.88
3	1.02	1.14	0.91	0.90	0.99	0.94	0.93	0.99	0.94
4	1.35	1.53	1.19	0.98	0.99	0.95	1.00	1.02	0.96
1986-1	1.38	1.55	1.25	1.06	1.17	1.12	1.07	1.19	1.11
2	1.49	1.67	1.47	1.18	1.35	1.28	1.19	1.30	1.27
3	1.05	1.17	1.04	0.97	1.08	1.03	0.97	1.04	1.02
4	1.21	1.34	1.22	0.99	1.13	1.08	0.99	1.04	1.07
1987-1	1.08	1.20	1.07	0.92	1.06	1.01	0.92	0.97	0.98
2	1.01	1.10	1.07	0.90	1.00	0.96	0.90	0.94	0.94
3	0.80	0.87	0.87	0.81	0.98	0.94	0.82	0.85	0.90
4	1.14	1.25	1.19	0.95	1.15	1.10	0.94	0.98	1.05
1988-1	0.97	1.06	1.02	0.91	1.07	1.02	0.90	0.94	0.96
2	0.97	1.07	1.00	0.92	1.04	1.00	0.91	0.99	0.95
3	0.97	1.07	0.95	0.91	1.02	0.97	0.92	0.95	0.93
4	1.08	1.19	1.15	0.95	1.06	1.02	0.96	0.99	0.98
1989-1	1.05	1.16	1.05	0.87	1.01	0.96	0.88	0.90	0.92
2	1.03	1.13	1.04	0.92	1.01	0.97	0.92	1.02	0.93
3	0.93	1.02	0.90	0.84	0.97	0.92	0.85	0.91	0.88
4	1.00	1.10	0.98	0.83	0.97	0.92	0.85	0.88	0.88
Average	1.08	1.19	1.06	0.92	1.04	1.00	0.93	0.98	0.97
1	1.13	1.25	1.07	0.92	1.04	1.00	0.93	0.98	0.97
2	1.09	1.21	1.08	0.95	1.06	1.01	0.95	1.02	0.99
3	0.95	1.04	0.93	0.89	1.01	0.96	0.90	0.95	0.93
4	1.14	1.27	1.14	0.94	1.06	1.01	0.95	0.98	0.98

	Prices: Feeder Cattle $/cwt			Quantity Supplied: Steers & Heifers (000 head)			Cows & Bulls (000 head)		
	EC	WC	US	EC	WC	US	EC	WC	US
1985-1	1.00	1.00	1.00	1.00	0.99	1.00	0.91	0.93	0.90
2	0.87	0.91	0.93	1.00	1.01	0.99	0.96	0.97	0.89
3	0.88	1.04	0.82	1.00	1.00	1.00	0.98	0.97	0.92
4	0.91	1.02	0.84	0.98	0.99	0.97	0.99	1.01	0.97
1986-1	0.93	0.99	0.89	0.80	1.06	0.92	0.82	0.98	0.88
2	0.87	0.98	1.04	0.80	0.95	0.88	1.05	1.27	0.80
3	0.87	1.04	1.15	0.93	0.91	0.92	1.05	1.39	0.89
4	0.89	1.02	1.05	0.91	0.98	0.91	0.82	1.52	0.94
1987-1	0.84	0.90	1.07	0.85	1.05	0.94	0.84	1.32	0.96
2	0.74	0.78	1.02	0.90	1.09	0.96	1.11	1.34	0.91
3	0.71	0.82	0.94	0.99	0.99	0.97	1.16	1.22	0.96
4	0.74	0.83	0.80	1.12	1.02	0.91	0.94	1.54	1.08
1988-1	0.74	0.77	0.84	1.04	1.02	0.92	1.01	1.34	1.04
2	0.68	0.75	0.82	0.90	1.03	0.93	1.23	1.59	0.99
3	0.81	0.89	0.82	1.18	0.87	0.94	1.34	1.12	1.03
4	0.86	0.92	0.82	1.10	0.86	0.92	0.97	1.42	1.13
1989-1	0.86	0.84	0.81	0.96	0.91	0.97	0.85	1.26	1.07
2	0.83	0.80	0.79	0.88	1.13	0.94	1.04	1.46	1.00
3	0.82	0.89	0.81	1.16	0.88	1.00	1.02	1.10	1.13
4	0.85	0.94	0.74	1.23	0.87	0.94	0.94	1.33	1.43
Average	0.83	0.90	0.89	0.98	0.97	0.95	1.00	1.22	0.99
1	0.87	0.89	0.91	0.92	1.00	0.95	0.88	1.14	0.96
2	0.79	0.84	0.91	0.89	1.04	0.94	1.07	1.28	0.91
3	0.81	0.92	0.90	1.04	0.93	0.96	1.10	1.14	0.98
4	0.84	0.94	0.84	1.06	0.94	0.93	0.93	1.33	1.09

Conversely, the U.S. formula would have allowed only 61% as much into Canada as actually occurred. A quick glance at the first two formulas indicates that both Canada and the United States could have restricted offshore imports to a much larger degree since 1985. This is especially true for Canada.

The third and fifth formulas in Table 3.14 are a combination of the current U.S. and Canadian formulas. In the third one, the U.S. production adjustment is used in conjunction with the Canadian female adjustment. In the fifth the Canadian production adjustment is used in conjunction with the U.S. female adjustment. The intent here is to determine whether alterations in the formulas have a material effect on the level and timing of imports under the act.

Formulas four, six and seven in Table 3.14 contain alternative formulations that do not appear in either of the current laws. We decided to try using the share that cows represent of total marketings as a proxy for the beef cycle, rather than female slaughter. Thus formulas four and six rely on either the U.S. or Canadian production adjustment and the share that cows represent of total marketings in the previous two years relative to the previous five years. The final alternative uses the Canadian production adjustment and a faster trigger under the female adjustment component.

In this faster trigger, the share that cows represent of total marketings in the past two years relative to the shares that cows represent in the five year period ending one year earlier is used. For example, this ratio would be the share that cow marketings represent of total marketings in 1988 and 1989 relative to the share in the five years ending in 1988. This formulation puts a much greater weight on the most recent marketings.

Table 3.13: Policy Scenarios Analyzed

Type	Scenario	Description
A		Effects of Quantities -- Free Trade in North America
	1	No Offshore Net Exports to North America
	2	No Offshore Net Exports to Canada
	3	No Offshore Net Exports to the United States
	4	No Nicaraguan Exports to Canada
B.		Effects of Altered Rules to Trigger Imports under the Meat Import Laws
	5	Canada and U.S. Both Use the Current U.S. Formula
	6	Canada and U.S. Both Use the Current Canadian Formula
	7	Canada and U.S. Actually Apply Their Current Formulas
	8	Both Countries Use Canada's Production Adjustment and a Faster Female Adjustment
	9	Both Countries Use Canadian Production Adjustments and the U.S. Female Adjustment
C.		Effects of Transfer/Tariff Costs Within North America
	10	$5/cwt on High and Low Quality Beef
	11	$5/cwt on Low Quality Beef
D.		U.S. Restrictions on Canadian Exports
	12	10% of Current Exports of Low Quality Beef
	13	50% of Current Exports of Low Quality Beef
E.		Effects of Offshore Imports With and Without Restrictions in North America
	14	10% More Imports by Canada, Unrestricted N.A. Trade
	15	20% More Imports by Canada, Unrestricted N.A. Trade
	16	50% More Imports by Canada, Unrestricted N.A. Trade
	17	10% More Imports by Canada, 10% Reduction in Canadian Exports to the U.S.
	18	20% More Imports by Canada, 10% Reduction in Canadian Exports to the U.S.
	19	50% More Imports by Canada, 10% Reduction in Canadian Exports to the U.S.
	20	10% More Imports by Canada, 50% Reduction in Canadian Exports to the U.S.
	21	20% More Imports by Canada, 50% Reduction in Canadian Exports to the U.S.
	22	50% More Imports by Canada, 50% Reduction in Canadian Exports to the U.S.
	23	100% More Imports from Nicaragua to Canada, Unrestricted N.A. Trade
	24	100% More Imports from Nicaragua to Canada, 10% Reduction in Canadian Exports to the U.S.
	25	100% More Imports from Nicaragua to Canada, 50% Reduction in Canadian Exports to the U.S.
F.		Effects of Tariffication of the U.S. Meat Import Law
	26	A Tariff of 6.1%
	27	A Tariff of 1.6%

Table 3.14: Imports Determined from Formulae to Actuals:

		Formulas:						
	Actual	Current U.S.	Current Cda.	US Prod. Cdn Fem	US Prod Cow Sh	Cdn Pr. US Fem.	Cdn Pr. Cow Sh	Cdn Pr. Adj.
U.S.								
1975	1.00	0.82	0.90	0.90	0.87	0.82	0.87	1.11
1976	1.00	0.75	0.79	0.80	0.81	0.75	0.80	1.13
1977	1.00	0.95	0.93	0.94	1.03	0.95	1.03	1.20
1978	1.00	0.95	0.90	0.90	0.97	0.94	0.97	0.99
1979	1.00	1.04	0.94	0.94	0.99	1.04	1.00	0.82
1980	1.00	1.16	1.09	1.08	1.05	1.18	1.06	0.83
1981	1.00	1.13	1.13	1.12	1.08	1.14	1.09	0.94
1982	1.00	0.92	0.94	0.94	0.93	0.92	0.93	0.90
1983	1.00	0.90	0.92	0.93	0.94	0.89	0.93	1.01
1984	1.00	0.98	1.01	1.03	1.03	0.97	1.02	1.16
1985	1.00	0.91	0.93	0.94	0.95	0.90	0.93	1.08
1986	1.00	0.95	0.94	0.95	0.99	0.94	0.97	1.05
1987	1.00	0.94	0.92	0.93	0.96	0.93	0.95	0.95
1988	1.00	0.97	0.92	0.93	0.98	0.96	0.97	0.87
1989	1.00	1.02	0.98	1.01	1.02	0.99	0.99	0.94
Canada								
1975	1.00	0.58	0.59	0.60	0.61	0.57	0.60	0.66
1976	1.00	1.01	0.91	0.95	1.12	0.96	1.07	1.34
1977	1.00	1.01	0.80	0.89	1.15	0.91	1.04	1.19
1978	1.00	1.14	0.92	1.05	1.23	1.00	1.08	1.14
1979	1.00	1.53	1.24	1.45	1.48	1.31	1.27	1.13
1980	1.00	1.60	1.34	1.57	1.48	1.37	1.27	1.03
1981	1.00	1.40	1.17	1.37	1.33	1.20	1.13	0.99
1982	1.00	1.21	1.01	1.19	1.21	1.02	1.02	0.98
1983	1.00	1.09	0.92	1.10	1.12	0.91	0.94	1.01
1984	1.00	0.84	0.70	0.87	0.85	0.68	0.69	0.78
1985	1.00	0.87	0.72	0.90	0.87	0.71	0.70	0.84
1986	1.00	0.91	0.75	0.92	0.91	0.74	0.74	0.83
1987	1.00	0.78	0.68	0.82	0.76	0.64	0.64	0.65
1988	1.00	0.95	0.83	0.98	0.91	0.80	0.77	0.72
1989	1.00	0.61	0.54	0.63	0.60	0.52	0.51	0.49

Notes:

Current US	Current U.S. Formula
Current Cda	Current Canadian Formula
U.S. Prod.	U.S Production Trigger
Cdn Fem	Canadian Femal Trigger
U.S. Fem	U.S. Female Trigger
Cdn. Pr.	Canadian Production Trigger
Cow Sh	Female Trigger = share that cows represent of total marketings in the previous two years relative to the previous five years.
Adj.	Female Trigger = Same as Cow Sh. except the previous five years is based on a five year period ending one year earlier (i.e. 1983 - 1988 instead of 1984 - 1989)

In order to gauge the performance of these formulas, the import levels generated by each were plotted against total marketings and cow marketings in Canada. These are presented in figures 3.1 through 3.4. Our objective in plotting these is to determine whether any of the formulations do a better job of tracking the beef cycle than does the current Canadian formula. The data in Table 3.14 and in the figures suggest the following. First, various formulas allow greater or lesser amounts of imports on average. Second, whether one uses total marketings or cow marketings as an indication of the beef cycle, it does not appear that any of the formulations do a better job of tracking the beef cycle than does the current one. Several appear to be worse than the current formula, especially the last one, which puts the greatest weight on the most current year.

It is important to note, given the arguments of the Canadian Cattlemen's Association, that if Canada applied the U.S. formula it would increase the level of market access relative to the current Canadian formula. Figure 3.5 is a bar chart showing the levels of market access with each of the two formulas relative to actual imports. The chart shows that in every year except 1975 the U.S. formula would have given a higher level of access to the Canadian market.

It is our judgement that altering the formula would not have a material benefit on the performance of the Meat Import Act. Nevertheless, two of the alternative formulas from Table 3.14 are included in the analysis. The last formula from Table 3.14 is scenario 8 in Table 3.13. The fifth formula from Table 3.14 is scenario 9 in Table 3.13.

Fig. 3.1: MARKET ACCESS UNDER CANADIAN AND U.S. TRIGGER; CANADIAN CATTLE AND COW MARKETINGS

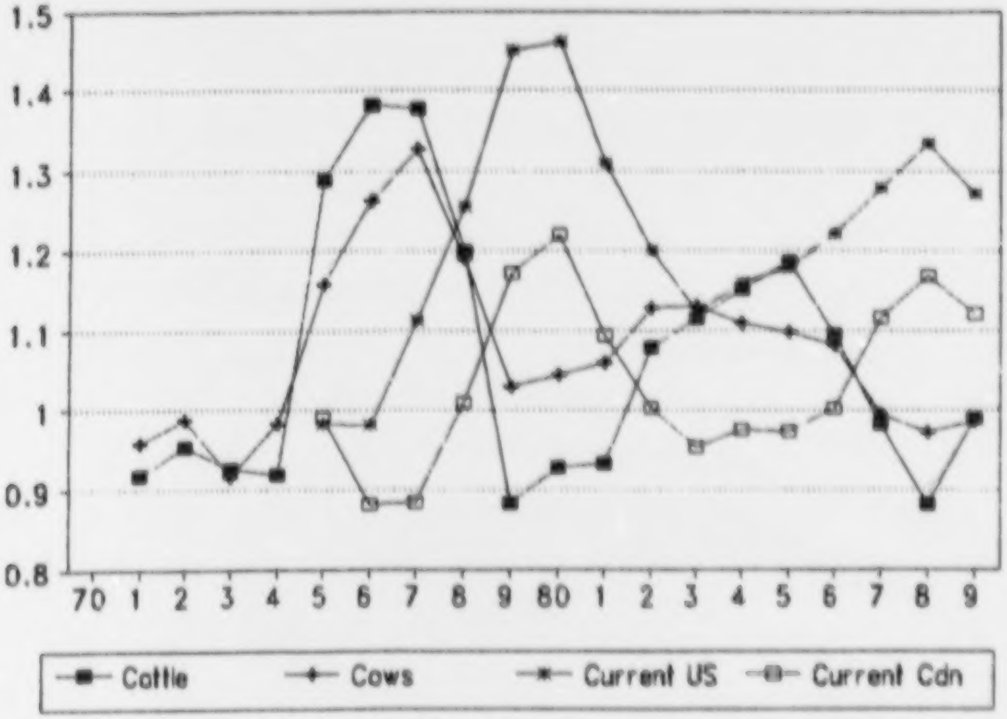


Fig. 3.2: MARKET ACCESS UNDER FORMULAS THREE AND FOUR; CANADIAN CATTLE AND COW MARKETINGS

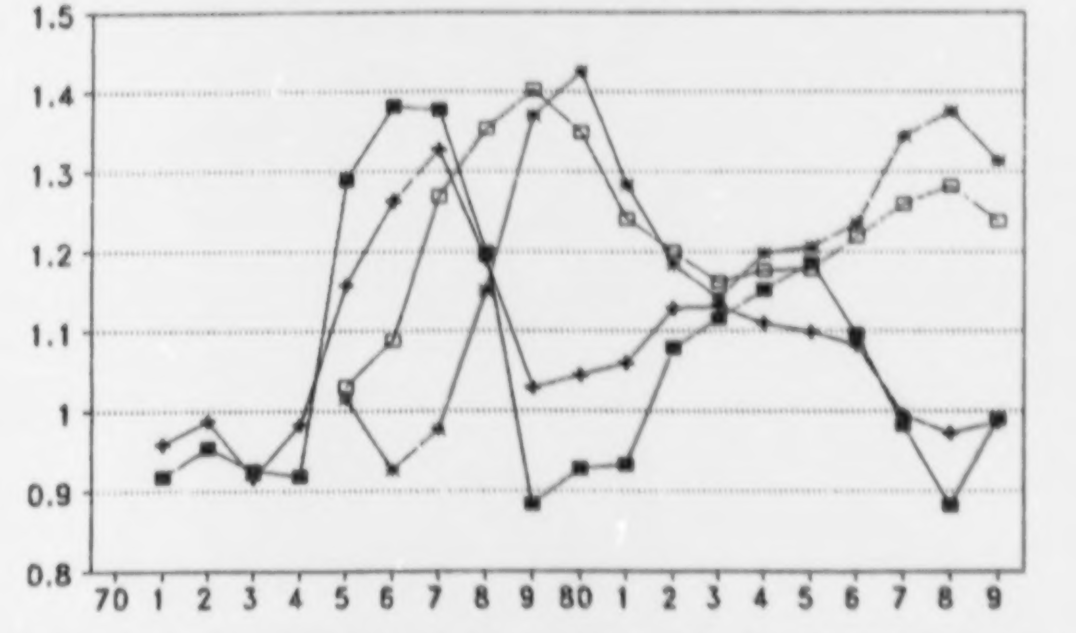


Fig. 3.3: MARKET ACCESS UNDER FORMULAS FIVE AND SIX; CANADIAN CATTLE AND COW MARKETINGS

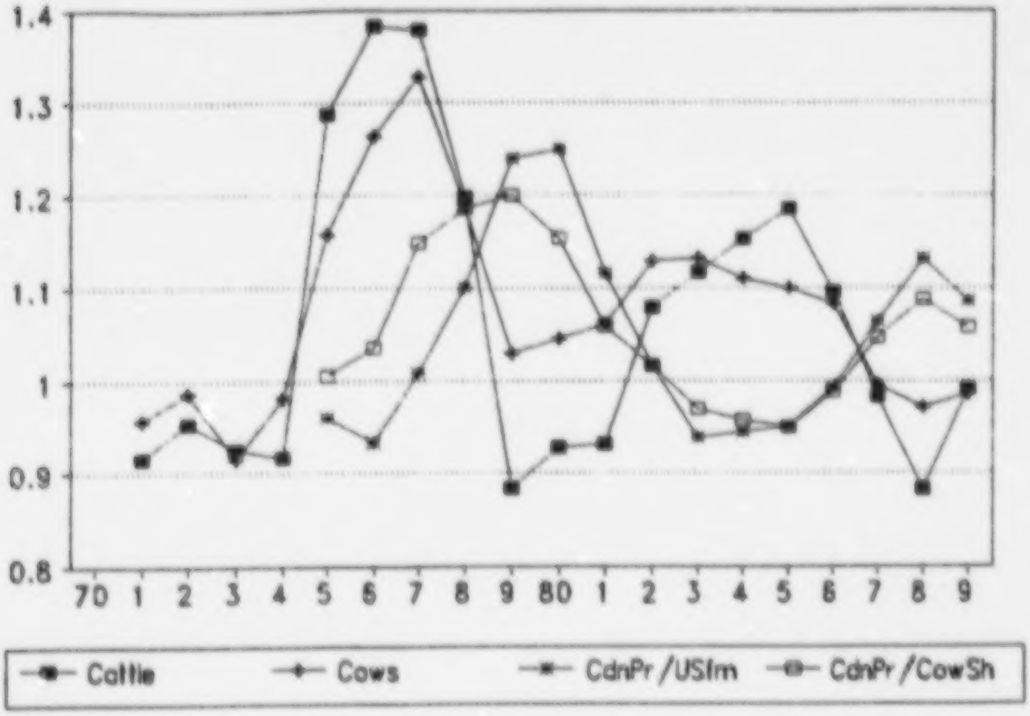


Fig. 3.4: MARKET ACCESS UNDER FORMULAS SEVEN AND EIGHT; CANADIAN CATTLE AND COW MARKETINGS

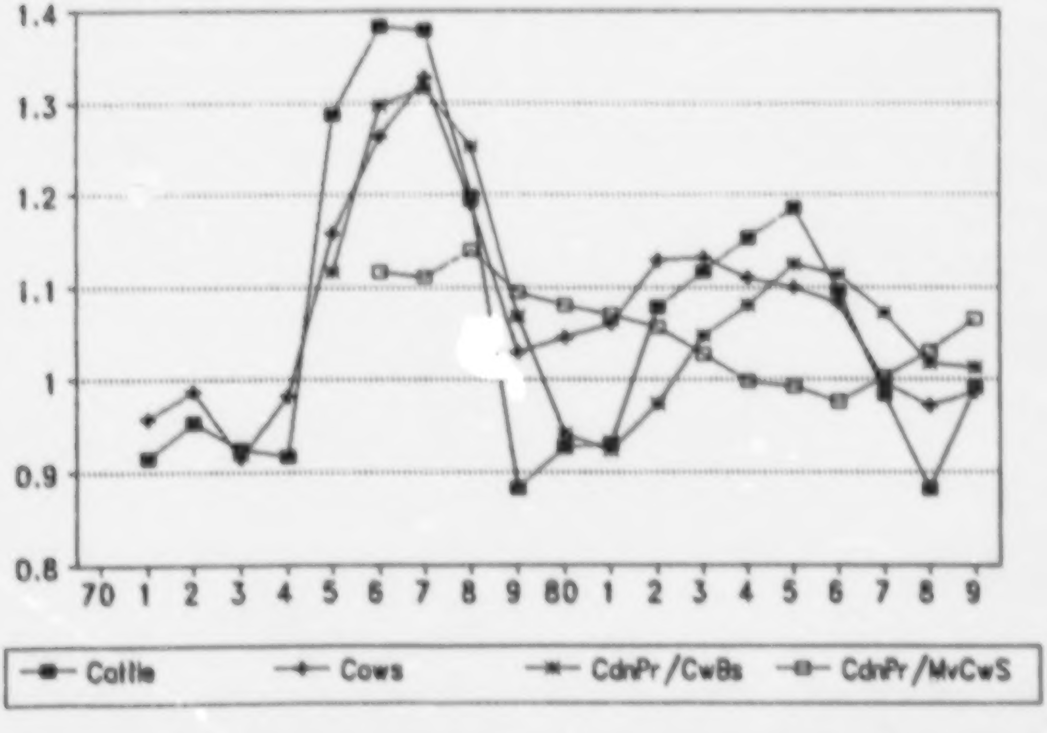
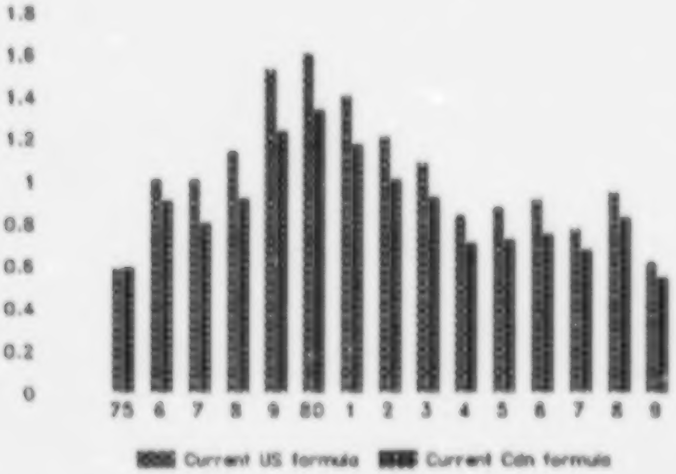


Figure 3.5: Market Access Resulting from Application of the Canadian and U.S. Meat Import Laws in Canada, 1980 - 1989



Set C of the scenarios in Table 3.13 is intended to investigate the effects of tariffs or increased transfer costs. These scenarios have relevance in at least two ways. First, the current conflict between the United States and Canada over meat inspection is creating problems with respect to moving product into the United States. In our survey of people in the industry, one major exporter felt that the conflict is costing in the order of five dollars per cwt. of beef exported because of delays and returns. Second, under Article 11 of the Canada - U.S. Trade Agreement, the United States can seek relief under Article XIX of GATT if there is a surge in exports from Canada and if Canadian exports represent more than 5% or 10% of total American imports. This appears to be the case, despite the fact that the United States has agreed in the CUSTA that Canada would not be subject to its Meat Import Law. It is not clear in what form such relief might come. Therefore, we examine the possibility of a tariff being imposed on Canadian product. In both scenarios in Set C, the amount of the tariff or transfer cost is five dollars per cwt. It is imposed on both high and low quality beef, in scenario 10 and only on low quality beef in scenario 11.

Set D in Table 3.13 consists of scenarios that investigate the impact of quantitative restrictions imposed by the United States on Canadian product. As indicated above, the CUSTA apparently gives the United States the right to impose trade restrictions on Canada if Canada's product represents more than 5 or 10% of U.S. imports. Given that over the past several years, Canada's imports have represented from 9.5% to in excess 11% of U.S. imports, this becomes a realistic potential threat. If the United States were to impose quantitative restrictions, it would seem logical to conclude that such restrictions would be imposed to limit Canada's share to either 10% or 5% of the market. In order to approximate these alternatives, scenarios have been analyzed which restrict Canada's exports to the United States to be either 10% less than the actual or 50% less than the actual.

Set E of the scenarios in Table 3.13 is intended to analyze the effect of alternative levels of offshore imports with and without trade restrictions imposed by the United States. There are many potential situations to which these scenarios might be relevant. In the future, if the GATT negotiations result in harmonized health inspection standards that allow better access to the North American Market, by countries which have hoof and mouth disease, then it is useful to know what impacts various levels of imports might have. Similarly, given that the imposition of a countervailing duty on subsidized European beef by Canada will be reviewed in 1991, it may be of value to anticipate what the effects of these imports might be. This is particularly the case because the Europeans have a very restrictive voluntary export agreement with the United States. If the United States perceives that the Europeans are circumventing their obligations by transhipping beef through Canada, then Canada may face the spectre of sanctions under Article 11 of CUSTA. In order to get at the joint implications of increased imports from offshore sources and U.S. restrictions on Canadian exports, scenarios 14 through 22 in Table 3.13 combine six alternatives into nine strategies. The six alternatives are:

10%, 20% and 50% more imports to Canada from offshore sources, and:

1) unrestricted North American trade

2) a restriction of 10%, below Canada's current exports to the United States; and

3) a restriction of 50% below Canada's current exports to the United States.

The final three scenarios in Set E have to do with Nicaraguan beef. In all three cases, we have assumed a 100% increase in Nicaraguan imports to Canada in combination with no restrictions by the United States, a 10% restriction and a 50% restriction by the United States on Canadian product.

The scenarios in Set E are clearly designed to give some notion about the level of "hurt" for the Canadian beef industry of alternate levels of offshore imports and with alternate amounts of restriction by the United States.

The scenarios in Set F are designed to investigate the effects of a move by the United States to convert its meat import law to a tariff equivalent. The U.S. International Trade Commission, as discussed in Section 2.1, estimated the tariff equivalent to be 1.6% in 1986 and 6.1% in 1987. Thus each of the two tariffs were analysed as potential scenarios.

3.6 Results of the Policy Analysis

The results of the 27 policy scenarios outlined above are presented in Tables 3.S2 to 3.S28. Because of the amount of information included in the analysis, the results are summarized as percentage changes from the base run (Table 3.11). As can be seen in the tables, results are presented for both Eastern and Western Canada. Given that the model holds prices in a range defined by transfer costs, there is generally little point in discussing each region separately.

3.6.1 Effects of Quantities - Free Trade in North America

Table 3.S2 contains the results of scenario one with no net imports from offshore sources to North America. **These results indicate that low quality beef prices would rise by about 44 percent in Canada and high quality beef prices would rise by about 8 percent.** These changes in prices of beef would translate into increases of about 8 percent, in steer prices; 44 percent for cow prices; and from 6 to 9 percent for feeder cattle. The increased prices of steers and feeder cattle would result in a decline in marketings of cows and bulls and an increase in the marketings of steers and heifers.

The much smaller decline in cow marketings in eastern Canada reflects the less responsive feeder cattle price relationship and the much less responsive cow marketing relationship. The fact that steer and heifer marketings increase by approximately the same percentage in both eastern and western Canada reflects the implicit assumption that eastern Canadian feedlot operators would be able to compete for feeder cattle with feedlots in other jurisdictions. High quality beef production would increase in proportion to the increased marketings of steers and heifers. However, low quality beef production would not change proportionately to the marketings of cows and bulls. This is, of course, because of the fact that low quality beef is assumed to be produced from steers and heifers as well as from cows and bulls.

The columns in Table 3.S2 that have to do with quantity traded indicate first that offshore imports of low quality beef from Canada and the United States would decline by 100 percent, which was assumed. Second, the North American changes in trade indicate that **Canadian exports of low quality beef to the United States** would increase by about 64 percent from the base run while Canada's imports of high quality beef from the United States would increase by about 2 percent. Canada's exports would increase because the U.S. imports relatively more from offshore sources than does Canada.

The time pattern in this and all of the scenarios which remove a substantial amount of imports are quite similar: the maximum price increases occur in the early quarters and then decline because of the consequent supply response.

Table 3.S3 contains the results of the scenarios with no net imports from offshore sources to Canada. As would be expected from the relative sizes of the markets, **this scenario results in only a 2 percent increase in North American low quality beef prices**, and cow prices. High quality prices would not be materially affected, and there would be only a small effect on marketing and production. This is to be expected because Canada's net trade with offshore countries is about one twentieth the size of U.S. trade. The model indicates that **Canada's exports of low quality beef to the U.S. would decline by about 52 percent.** This is slightly more than half of the decline in net imports to Canada from offshore.

Table 3.S4 contains the results of the scenario with all U.S. net imports of low quality beef removed. This scenario has slightly less impact than did scenario one. **Low quality prices rise by about 42 percent. Canada's exports would increase to the U.S. by about 117 percent.**

Table 3.S5 contains the results of the scenario with all imports of beef from Nicaragua to Canada removed. **Because of the extremely small size of this quantity, there is almost no effect on North American** prices. However, Canada's exports of low quality beef to the United States would decline by about 5 percent. Again, this represents about one half of the decline in imports from Nicaragua.

3.6.2 The Effects of Scenarios with Different Formulas for Calculating Access Under the Meat Import Act

In Table 3.S6 are presented the results of the simulation with Canada and the United States both using the U.S. minimum access formula to trigger import quotas. As indicated previously, this scenario would lower U.S. imports of beef from offshore sources because the U.S. has not always imposed import quotas when its law said it could. The scenario indicates that, on average, U.S. net imports of low quality beef from offshore sources would have been 4.2 percent lower had the quotas been imposed. **Applying it to Canada would have reduced Canada's net imports from offshore by 16.93 percent.**

These reductions in imports **would have raised Canada's prices of low quality beef by about 3.5 percent and high quality beef by less than one percent.** The prices of steers and heifers would have increased very little and the prices of cows and bulls by about 2 percent. Feeder cattle would not have been much affected and marketings would change little. As a result, there are marginal increases in the marketings of heifers and steers and marginal declines in the marketings of cows and bulls. Canada's exports of low quality beef to the United States would have fallen by about 4.8 percent.

When we apply Canada's formula to both countries (Table 3.S.7) we see a decline in U.S. net imports from offshore of about 6 percent and **in Canada of about 29 percent. These result in increased prices of about 3 percent for low quality beef and 0.5 percent for high quality beef.** In turn, these transmit into similar changes for cows and steers. The effects on marketings are trivial. Canada's exports of low quality beef would decline by about 8 percent, on average.

Table 3.S8 contains the outcome of limiting Canadian and U.S. imports by their own formulas respectively. The results of this scenario are very nearly identical to the scenario in 2.S7 discussed above, except that Canada's exports to the U.S. fall further (by 10.3%) because U.S. imports from offshore fall less.

Table 3.S9 contains the results of strategy 8, which limits access to both the U.S. and Canadian markets using the Canadian production trigger and the quicker adjustment on female marketings. On average, the **results**

of this scenario are very similar to the two preceding scenarios. This occurs because the effects on import levels in the two countries, on average, are quite similar. However, the time patterns are quite different because the formula represented by the analysis in 3.S9 has a very different pattern of market access. Its pattern is not highly correlated to the beef production cycle.

Table 3.S10 contains the effects of limiting imports using a formula that is a combination of the Canadian production trigger and the U.S. female trigger. **It has the largest effect on imports.** It limits Canada's net imports from offshore by 31 percent and the U.S. by 12 percent, on average. As a result of the more limiting impact on net imports, the price increases generated in the model are slightly larger than in the foregoing scenarios. However, the basic result is the same.

3.6.3 Effects of Tariff or Transfer Cost Increases Within North America

The scenarios described here all reflect the imposition bv the United States of a $5.00/cwt tariff, or they can be viewed as a $5.00/cwt increase in transfer costs resulting from, for example, increased inspection costs.

In Table 3.S11, we impose a $5.00/cwt tariff on all beef shipped from Canada to the United States. The results **are price changes of about 4.5 percent for low quality beef and about 2.5 percent for high quality beef and steers and heifers.** There are marginal changes in marketings, with an increase in cow and bull marketings, low quality beef production, and a slight decrease in steer and heifer marketings and in high quality beef production. The price impact on live animals is probably overstated if the tariff was to be placed on only beef. In reality, there would be very substantial pressure on Canadian meat packers' margins and increased exports of live animals and live animal prices would not likely fall by the full tariff effect. The most important factor in this case is that **Canada's exports of low quality beef would decline by about 6.25 percent, on average.** This result comes from the fact that Canada's low quality beef prices would decline, thereby increasing the domestic demand for low quality beef. Conversely, Canada's imports of high quality beef would increase by about 5 percent because of the decline in Canada's production of high quality beef.

Table 3.S12 contains the results of placing the $5.00/cwt tariff on low quality beef. Again, **prices of low quality beef decline by almost five percent, as they do for cows and bulls. High quality beef, steer and feeder**

prices are negligibly affected. Marginal effects are felt on production and marketings. Note that, compared to 3.S11, there is no effect on low quality beef production. However, there is a greater impact on Canada's **exports of low quality beef to the United States, they decrease by 13.8 percent.** This results from the fact that Canada's low quality beef production does not increase in this scenario.

3.6.4 Effects of U.S. Restrictions on Canadian Exports

Table 3.S13 contains the results of the scenario in which the United States imposes quantitative import restrictions on Canadian exports equal to a ten percent reduction in those exports. The result is that **prices of low quality beef and cows and bulls fall by about 3.5 percent, on average.** Prices of high quality beef, steers and heifers and feeder cattle fall by less than one percent. There is a very negligible impact on marketings and quantity supplied.

Table 3.S14 contains the effects of a U.S. import restriction equal to 50 percent of Canada's exports to the United States. In this scenario, Canada's **low quality beef prices decline by about 18 percent, as do cow prices. Even though the restrictions apply only to low quality beef in the model, high quality and steer prices fall by about 3.5 percent.** This results from the cross relationship in the demand model. Feeder cattle prices also fall by three or four percent. The effects on prices result in a reduction in Canada's output of steers and heifers and of high quality beef. It also results in a marginal increase in the marketings of cows and low quality beef production.

3.6.5 The Effects of Offshore Imports With and Without Restrictions in North America

The following scenarios jointly analyze the effects of increased imports from offshore and of quantitative restrictions on Canada's exports to the United States. The details are reported in Tables 3.S15 through 3.S23. The price effects, which are the most important in these scenarios, are summarized in Table 3.15 for both low and high quality beef. The relative effects of offshore imports and U.S. trade restrictions are rather dramatic. **With the Canada-U.S. border open, the analysis suggests that substantial increases in Canadian imports would not have a material affect on Canadian (or U.S.) prices. However, if the United States were to simultaneously** impose quantitative restrictions on Canada's exports to the U.S., the consequences would be quite serious, particularly for the low quality segment of the market.

Table 3.15 Summary of Price Effects of Increased Imports and U.S. Quantitative Restrictions

Offshore Imports Increase By	Low Quality Beef U.S. Trade Restriction of:		
Offshore Imports Increase By	0%	10%	50%
10%	-0.2%	-5.7%	-20.2%
20%	-0.4%	-7.7%	-22.1%
50%	-1.0%	-14.1%	-28.3%
Offshore Imports Increase By:	High Quality Beef U.S. Trade Restriction Of:		
	0%	10%	50%
10%	0%	-1.1%	-3.9%
20%	-0.1%	-1.5%	-4.3%
50%	-0.2%	-2.7%	-5.5%

Tables 3.S24 through 3S.26 contains similar analyses of the joint impacts of a 100 percent increase in Nicaraguan beef exports to Canada and trade restrictions imposed by the United States. As would be expected, the Nicaraguan imports, in themselves, have little impact on prices. However, the consequences on cattle prices become quite substantial if quantitative restrictions are imposed by the United States.

3.6.6 Effects of the U.S. Meat Import Law Being Converted to an Equivalent Tariff

The final set of scenarios pertains to the tariffication of the U.S. Meat Import Law. It is important to begin with detail on the way in which these scenarios were analysed. First, as indicated in Section 3.4, the USITC estimated the tariff equivalent to be 1.6% in 1986 and 6.1% in 1987. thus the two scenarios are 6.1% and 1.6%. Because of the nature of the model, each tariff equivalent was imposed through a reduction in offshore imports by the U.S. The reduction is the amount by which it is estimated by the USITC that imports were reduced by the U.S. policy. The quantity resulting from the 6.1% tariff is 11.7%. The quantity associated with the 1.6% tariff is 3.4%.

The analysis was conducted assuming that the U.S. imposed this tariff equivalent on offshore suppliers, but not Canada. Moreover, it was also assumed that there would be no transfer of exports by offshore sources from the U.S. to Canada as a result of the tariffication. This is quite clearly an unrealistic assumption. On the other hand, if Canada expects to be exempted from a U.S tariff, then it is quite clear, given the results reported in Section 3.6.5, that Canada would need to do something to control offshore imports. Otherwise, one would surely expect the United States to retaliate against Canada if it became a "back door" for imports from countries that the U.S. attempts to keep out. The results give some measure of the pressure.

Table 3.S.27 contains the results of the tariffication at 6.1%. Note that **Canadian net exports to the U.S. of low quality beef increase by 13.6%**. North American prices for low quality beef and cows would rise by about five percent. High quality beef prices would rise by about one percent. Canadian steer and heifer slaughter would increase, while cow and bull slaughter would decline marginally as the breeding herd is built up to respond to higher feeder cattle prices.

Tables 3.S28 indicates that a tariff of 1.6% would have a negligible effect on the market.

It should be noted that the model assumes a perfectly inelastic offshore export supply at the levels indicated. Again, this is unrealistic, especially at the lower tariff: one would expect an upward sloping export supply function. Hence the analysis likely over estimates the effect on offshore imports as well as on the change in price.

3.6.7 Summary

Table 3.16 contains a summary of the scenarios and their trade implications. Their trade policy implications will be discussed in Section 5.0. Below is a summary of the major conclusions about the effects of Canada's trade in beef and the effects of the policy scenarios on the market.

First, we find no evidence that changes in the imports to Canada from offshore will be injurious to the Canadian industry under an open Canada-U.S. border. Reducing or eliminating Nicaraguan imports will have no tangible effect on North American prices. Likewise, increases of Canadian imports from offshore (up to 50% of current net levels) will have little effect on prices of low quality beef and cows in Canada. This limited impact is largely attributable to the size, structure and scale of the Canadian industry, and the volume of our trade with the U.S.

However, it is also noted that:

- increased Canadian imports from offshore are highly correlated with increased Canadian exports of low quality beef to the United States;
- increased U.S. offshore imports have a significant impact on beef prices in Canada;
- quantitative restrictions or tariffs imposed by the U.S. on Canada, when Canada has increased levels of offshore imports, will have a sharply negative impact on the Canadian market.

We have also noted in the comparisons between the Canadian and U.S. formulae for limiting access that the Canadian formula applied in Canada is more effective in reducing access than is the U.S. formula applied in Canada or any combination of the two.

Finally, we note that if the U.S. were to change its Meat Import Law to an equivalent tariff, then North American beef prices, offshore trade and Canada's exports to the U.S. would be affected.

Table 3.16 Impacts of Quantity Changes Under Free Trade

Scenario	Description	Trade Implications
1 Table 3.82	No net imports from offshore sources to North America	L.Q.B. prices rise @44% in Canada H.Q.B. prices rise @8% Steer prices rise 44% Cow prices rise 44% Feeder cattle prices rise 6.8% Decline in marketing cows & bulls Increase marketing steers & hiefers Increase production of H.Q.B. Exports of L.Q.B. to U.S. rise @54% Exports of H.Q.B. to U.S. rise @2%
2 Table 3.83	No net imports from offshore to Canada	L.Q.B. prices increase @2% Cow prices increase @2% No change in H.Q.B. prices Limited effect in marketing and production Exports of L.Q.B. to US decrease 52%
3 Table 3.84	All U.S. net imports of L.Q.B. removed	Slightly less impact than scenario 1 L.Q.B. prices rise @42% Exports to the U.S. increase by @117%
4 Table 3.85	All imports of beef from Nicaragua to Canada are removed	Almost no effect on North American prices Can. exports of L.Q. B. to the U.S. decline @5% (½ of decline in imports from Nicaragua)
5 Table 3.86	Canada & U.S. both use the U.S. minimum access formula to trigger import quotas	U.S. net imports of L.Q.B. from offshore decrease by 4.2% Canada's net imports from offshore decrease 16.03% L.Q.B. prices in Canada rise 3.5% H.Q.B. prices in Canada rise < 1% Price of cows and bulls rise 2% Marketings change little Exports of L.Q.B. to the U.S. fall 4.8%
6 Table 3.87	Canada's formula for limiting access applied to both countries	U.S. net imports from offshore fall 6% Can. imports from offshore fall 20% L.Q.B. prices rise about 3% H.Q.B. prices rise about 5% Can. exports of L.Q.B. fall about 8%
7 Table 3.88	Can. & U.S. imports limited by their own formulas	Same impacts as Scenario 6 Can. exports to U.S. fall 10.3%

Table 3.16 continued

Scenario	Description	Trade Implications
8 Table 3.S9	Access to both the U.S. & Can. limited by Can. production trigger and adjustment on female marketings	Similar impacts as Scenarios 6 & 7
9 Table 3.S10	Imports limited using a formula combining Can. production trigger and U.S. female trigger	Can. net imports fall 31% U.S. net imports fall 12% Slightly higher price increases than scenario 8-1
10 Table 3.S11	$3.00/cwt tariff imposed on all beef shipped from Can. to the U.S.	L.Q.B. prices rise 4.3% H.Q.B. prices rise 2.3% Steer & heifer prices rise 2.3% Marginal changes in marketings Substantial pressure on Can. meat packers' margins and increased exports of live animals L.Q.B. prices fall Can. imports of H.Q.B. rise 3% due to decline in Can. production of H.Q.B.
11 Table 3.S12	$5.00/cwt tariff imposed on low quality beef	L.Q.B. prices fall by 5% Cow and bull prices fall by 3% H.Q.B. prices hardly affected Marginal effects on production and marketings L.Q.B. exports to U.S. fall by 13.8% because L.Q.B. production does not increase
12 Table 2.S13	U.S. imposes 10% import restrictions on Can. exports	L.Q.B. cow and bull prices fall 3.5% H.Q.B., steer, heifer and feeder cattle prices fall < 1% Negligible impact on marketings and quantity supplied
13 Table 2.S14	U.S. import restriction = 50% of Canada's exports to the U.S.	L.Q.B. and cow prices fall about 10% H.Q.B. and steer prices fall about 3.5% Feeder cattle prices fall 3-4% Can. output of steers, heifers and H.Q.B. is reduced Marginal increase in marketings of cows, and L.Q.B. production

Table 3.16 continued

Scenario	Description	Trade Implications
14-23 Table 3.S15 - 3.S23	Can-U.S. border open with substantial increases in Can. imports from offshore	With border open no substantial effect on Can. or U.S. prices With quantitative restrictions on Can. exports to the U.S., L.Q.B. prices fall as much as 28.3% Prices of H.Q.B. fall as much as 5.5%
23-25 Table 3.S24 -3.S26	100% increase in Nicaraguan exports to Canada, with varying restrictions placed on Can. exports by the U.S.	Nicaraguan imports have little impact on prices U.S. quantitative restrictions have substantial impact on Can. cattle prices
23-25 Table 3.S24 - 3.S26	100% increase in Nicaraguan exports to Canada, with varying restrictions placed on Can. exports by the U.S.	Nicaraguan imports have little impact on prices. U.S. quantitative restrictions have substantial impact on Can. cattle prices
26 Table 3.S27	U.S. Removes a 6.1% tariff on offshore imports of L.Q.B., Canada-U.S. have free trade	Removal of the tariff equivalent of the U.S. MIL in 1988 has moderate impact on prices somewhat greater impact on N.A. trade flows.
27 Table 3.S28	U.S. removes a 1-8% tariff on offshore imports of L.Q.B. Canada - U.S. have free trade	Removal of the tariff equivalent of the U.S. MIL IN 1987 has negligible impact on prices and moderate impact on N.A. trade flows.

3.7 Analysis of the Global Minimum Access Commitment (GMAC)

Canada's Meat Import Act is administered using the formula discussed previously as a guide in establishing the level of import quotas. However, there are also other guidelines. First, Canada guaranteed a minimum access to other countries that is equal to a number negotiated in 1981. The number is 63.1 million kilograms. It is adjusted annually for population changes. By 1990, the annual adjustments had increased it to 69.4 million kilograms. If this level is greater than the formula level, then it is used.

Second, there is a per capita disappearance adjustment. It says that if this year's formula gives a trigger less than last year's trigger adjusted by the change in population from last year to this year, then this year's trigger is ignored. Obviously, if the GMAC is higher, then both are ignored.

Finally, there is ministerial discretion.

Figure 3.17 contains the time paths of: the trigger calculated from the formula; the GMAC; the trigger calculated from the per capita disappearance adjustment; and the actual level of imports. The data reveal a number of interesting facts. First, the formula has been irrelevant since 1980: the GMAC would have provided more access in virtually every year of the past decade. Thus from an economic perspective, it is a waste of time to simply tinker with the formula (as was done in Set B of the scenarios analysed in Section 3.6). The GMAC overwhelms the formula.

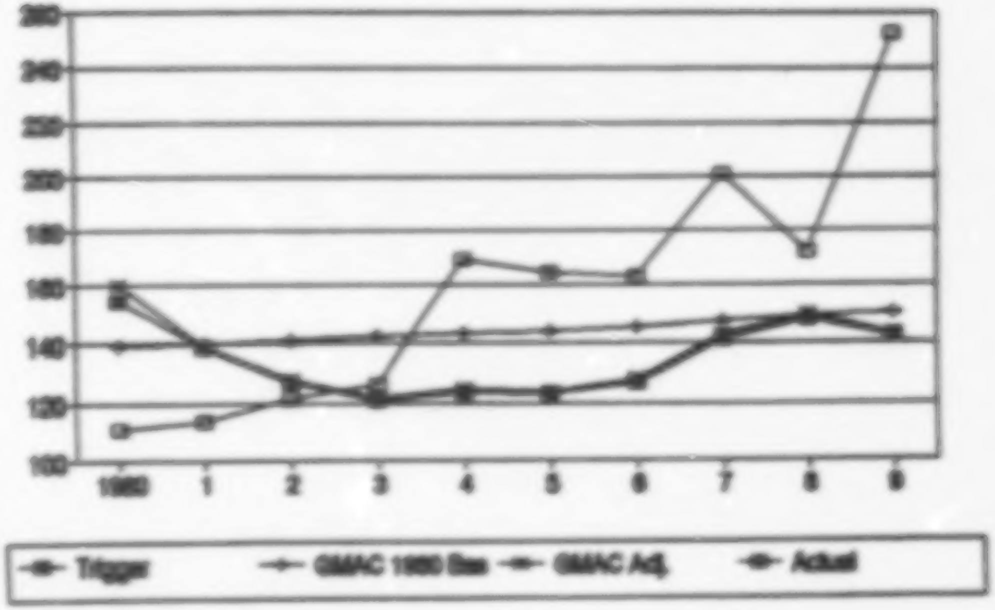
Second, the same is essentially true for the adjustment formula. It is marginally higher than the trigger for the basic formula in most years, but it remains generally lower than the GMAC.

Finally, with the exception of 1982 and 1983, ministerial discretion has been the most important factor, in that actual imports have been far greater than either of the triggers or the GMAC.

It should also be noted that Canada has now excepted the United States from the Meat Import Act, and that much of the growth in Canadian imports during the past decade has been from the U.S. Had the GMAC been based on the offshore share of the 1980 base and then adjusted annually by Canada's population growth, the differences between the "offshore" GMAC and actual offshore imports would be much less dramatic than the

FIGURE 3.17

Canadian Import Level Analysis
(Million Lbs)



data shown in 3.17. The same holds for the formula, and for the adjusted formula. In other words, the main source of the departure between the actual imports in Figure 3.17 and either of the formulas or the GMAC is the rapidly growing U.S. imports. Since Canada has determined that these rapidly growing imports of (mainly) high quality beef from the United States are acceptable in our market, while the less rapidly growing imports of low quality beef from offshore sources are not acceptable, then offshore imports have made a rather trivial contribution to the problem perceived by the cattle industry.

Table 3.82

Canada and U.S. Eliminate Offshore Imports. N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	63.49%	63.91%	8.09%	8.10%	8.05%	8.10%	63.19%	63.91%	5.87%	9.10%
Quarter 1	68.84%	61.02%	7.69%	7.73%	7.68%	7.73%	60.37%	61.02%	4.93%	8.12%
2	63.51%	63.91%	7.20%	7.31%	7.22%	7.31%	63.24%	63.91%	5.54%	8.09%
3	67.12%	67.70%	11.13%	11.22%	11.07%	11.22%	66.60%	67.70%	6.13%	8.70%
4	56.04%	56.08%	6.57%	6.62%	6.54%	6.62%	56.09%	56.90%	6.89%	10.40%
Minimum	17.27%	17.40%	-0.08%	-0.08%	-0.07%	-0.08%	17.17%	17.40%	0.00%	0.00%
Maximum	79.61%	71.42%	17.09%	17.24%	16.99%	17.24%	70.04%	71.42%	8.92%	14.28%

QUANTITY: SUPPLIED: TRADED:

	Steers & Heifer		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	3.08%	3.34%	-0.49%	-5.10%	3.09%	3.38%	0.88%	-1.40%	-100.00%	-100.00%	84.80%	1.41%
Quarter 1	2.70%	3.21%	-0.40%	-3.91%	2.83%	3.25%	0.58%	-1.42%	-100.00%	-100.00%	80.22%	1.02%
2	3.57%	3.57%	-0.40%	-5.08%	3.59%	3.59%	0.73%	-1.08%	-100.00%	-100.00%	85.57%	1.37%
3	2.84%	3.10%	-0.49%	-6.49%	2.86%	3.10%	0.50%	-1.78%	-100.00%	-100.00%	83.41%	1.38%
4	3.17%	3.40%	-0.59%	-5.60%	3.17%	3.45%	0.85%	-1.37%	-100.00%	-100.00%	89.36%	2.39%
Minimum	0.00%	0.00%	-0.70%	-9.32%	0.00%	0.00%	0.00%	-2.36%	-100.00%	-100.00%	3.40%	-0.03%
Maximum	5.47%	5.42%	0.00%	0.00%	5.47%	5.42%	1.34%	0.98%	-100.00%	-100.00%	103.36%	3.30%

Table 3.53

Canada Eliminates Offshore Imports. U.S. Imports at Historical Levels. N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	2.07%	2.09%	0.38%	0.38%	0.38%	0.38%	2.05%	2.09%	0.29%	0.44%
Quarter 1	1.78%	1.80%	0.32%	0.32%	0.32%	0.32%	1.77%	1.80%	0.24%	0.40%
2	2.14%	2.16%	0.37%	0.37%	0.37%	0.37%	2.12%	2.16%	0.25%	0.41%
3	3.03%	3.07%	0.62%	0.62%	0.61%	0.62%	3.01%	3.07%	0.29%	0.42%
4	1.46%	1.48%	0.24%	0.24%	0.24%	0.24%	1.45%	1.48%	0.36%	0.54%
Minimum	0.96%	0.96%	0.05%	0.05%	0.05%	0.05%	0.95%	0.96%	0.00%	0.00%
Maximum	4.16%	4.20%	1.07%	1.07%	1.06%	1.07%	4.12%	4.20%	0.51%	0.81%

QUANTITY:

	SUPPLIED:								TRADED:			
	Steers & Heifer		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	0.15%	0.16%	-0.02%	-0.26%	0.15%	0.16%	0.03%	-0.08%	-100.00%	0.00%	-52.53%	0.07%
Quarter 1	0.13%	0.15%	-0.02%	-0.19%	0.13%	0.16%	0.03%	-0.07%	-100.00%	0.00%	-45.53%	0.05%
2	0.19%	0.19%	-0.02%	-0.26%	0.19%	0.19%	0.04%	-0.05%	-100.00%	0.00%	-55.31%	0.07%
3	0.13%	0.15%	-0.02%	-0.33%	0.14%	0.15%	0.02%	-0.10%	-100.00%	0.00%	-56.39%	0.06%
4	0.14%	0.16%	-0.02%	-0.27%	0.14%	0.16%	0.03%	-0.08%	-100.00%	0.00%	-61.18%	0.11%
Minimum	0.00%	0.00%	-0.04%	-0.51%	0.00%	0.00%	0.00%	-0.16%	-100.00%	0.00%	-73.22%	-0.00%
Maximum	0.31%	0.31%	0.00%	0.00%	0.31%	0.31%	0.07%	0.05%	-100.00%	0.00%	-31.07%	0.16%

Table 3.S4

U.S. Eliminates Offshore Imports. Canadian Imports at Historical Levels. N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	41.42%	41.82%	7.71%	7.77%	7.67%	7.77%	41.14%	41.82%	5.58%	8.65%
Quarter 1	38.86%	39.23%	7.38%	7.43%	7.34%	7.43%	38.80%	39.23%	4.69%	7.72%
2	39.38%	39.75%	6.89%	6.94%	6.86%	6.94%	39.12%	39.75%	5.29%	8.58%
3	54.09%	54.69%	10.52%	10.60%	10.46%	10.60%	53.60%	54.69%	5.82%	8.28%
4	35.18%	35.51%	6.33%	6.38%	6.30%	6.38%	34.95%	35.51%	6.53%	9.94%
Minimum	15.70%	15.82%	-1.02%	-1.02%	-1.01%	-1.02%	15.61%	15.82%	0.00%	0.00%
Maximum	66.45%	67.23%	16.03%	16.17%	15.93%	16.17%	65.91%	67.23%	8.42%	13.47%

QUANTITY:	SUPPLIED:								TRADED:			
	Steers & Heifer		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	2.93%	3.18%	-0.45%	-4.89%	2.95%	3.20%	0.57%	-1.39%	0.00%	-100.00%	116.53%	1.34%
Quarter 1	2.66%	3.06%	-0.38%	-3.71%	2.69%	3.10%	0.56%	-1.36%	0.00%	-100.00%	110.75%	0.98%
2	3.38%	3.38%	-0.44%	-4.80%	3.40%	3.40%	0.69%	-1.03%	0.00%	-100.00%	110.88%	1.30%
3	2.70%	2.99%	-0.46%	-6.16%	2.72%	3.01%	0.48%	-1.69%	0.00%	-100.00%	109.84%	1.31%
4	3.03%	3.29%	-0.56%	-5.42%	3.03%	3.29%	0.58%	-1.49%	0.00%	-100.00%	140.58%	2.28%
Minimum	0.00%	0.00%	-0.74%	-6.81%	0.00%	0.00%	0.00%	-2.80%	0.00%	-100.00%	44.56%	-0.04%
Maximum	5.10%	5.13%	0.00%	0.00%	5.10%	5.13%	1.17%	0.91%	0.00%	-100.00%	173.53%	3.21%

Table 3.85

Canada Eliminates Imports from Nicaragua, N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	0.18%	0.18%	0.04%	0.04%	0.04%	0.04%	0.18%	0.18%	0.02%	0.04%
Quarter 1	0.16%	0.16%	0.03%	0.03%	0.03%	0.03%	0.16%	0.16%	0.02%	0.03%
2	0.20%	0.20%	0.04%	0.04%	0.04%	0.04%	0.20%	0.20%	0.02%	0.03%
3	0.25%	0.26%	0.05%	0.05%	0.05%	0.05%	0.25%	0.26%	0.03%	0.04%
4	0.12%	0.12%	0.02%	0.02%	0.02%	0.02%	0.12%	0.12%	0.03%	0.05%
Minimum	0.07%	0.07%	0.01%	0.01%	0.01%	0.01%	0.07%	0.07%	0.00%	0.00%
Maximum	0.38%	0.38%	0.09%	0.09%	0.09%	0.09%	0.37%	0.38%	0.05%	0.08%

QUANTITY: SUPPLIED: TRADED:

	Steers & Heifer		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	0.01%	0.01%	-0.00%	-0.02%	0.01%	0.01%	0.00%	-0.01%	-8.82%	0.00%	-4.64%	0.01%
Quarter 1	0.01%	0.01%	-0.00%	-0.01%	0.01%	0.01%	0.00%	-0.01%	-9.21%	0.00%	-4.20%	0.00%
2	0.01%	0.01%	-0.00%	-0.02%	0.01%	0.01%	0.00%	-0.00%	-9.27%	0.00%	-5.13%	0.01%
3	0.01%	0.01%	-0.00%	-0.02%	0.01%	0.01%	0.00%	-0.01%	-8.37%	0.00%	-4.72%	0.00%
4	0.01%	0.01%	-0.00%	-0.02%	0.01%	0.01%	0.00%	-0.01%	-8.58%	0.00%	-4.40%	0.01%
Minimum	0.00%	0.00%	-0.00%	-0.04%	0.00%	0.00%	0.00%	-0.01%	-17.17%	0.00%	-9.73%	-0.00%
Maximum	0.02%	0.02%	0.00%	0.00%	0.02%	0.02%	0.00%	0.00%	-4.44%	0.00%	-2.17%	0.01%

Table 3.86

Canada and the U.S. Limit Offshore Imports According to the Current U.S. Formula.
N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	2.13%	2.15%	0.36%	0.37%	0.36%	0.37%	2.12%	2.15%	0.30%	0.46%
Quarter 1	1.93%	1.94%	0.32%	0.32%	0.32%	0.32%	1.91%	1.94%	0.28%	0.48%
2	1.95%	1.97%	0.29%	0.29%	0.29%	0.29%	1.94%	1.97%	0.29%	0.47%
3	2.93%	2.97%	0.53%	0.54%	0.53%	0.54%	2.91%	2.97%	0.28%	0.48%
4	1.84%	1.85%	0.32%	0.33%	0.32%	0.33%	1.83%	1.85%	0.33%	0.49%
Minimum	-0.13%	-0.13%	-0.36%	-0.36%	-0.35%	-0.36%	-0.12%	-0.13%	-0.01%	-0.01%
Maximum	5.76%	5.83%	1.58%	1.59%	1.57%	1.59%	5.71%	5.83%	0.82%	1.32%

QUANTITY: SUPPLIED: TRADED:

	Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	0.17%	0.19%	-0.03%	-0.30%	0.17%	0.19%	0.03%	-0.09%	-16.93%	-4.23%	-4.75%	0.22%
Quarte 1	0.16%	0.18%	-0.02%	-0.24%	0.16%	0.19%	0.03%	-0.09%	-17.75%	-4.04%	-3.48%	0.06%
2	0.20%	0.21%	-0.03%	-0.30%	0.21%	0.21%	0.04%	-0.07%	-17.40%	-3.94%	-5.13%	0.08%
3	0.17%	0.19%	-0.03%	-0.30%	0.17%	0.19%	0.03%	-0.10%	-16.20%	-4.50%	-4.13%	0.00%
4	0.16%	0.18%	-0.03%	-0.32%	0.16%	0.18%	0.03%	-0.11%	-16.69%	-4.38%	-6.07%	1.15%
Minimum	0.00%	0.00%	-0.07%	-0.80%	0.00%	0.00%	-0.00%	-0.29%	-39.00%	-9.00%	-24.00%	-0.00%
Maximum	0.50%	0.50%	0.00%	0.00%	0.50%	0.50%	0.11%	0.08%	-5.00%	2.00%	4.45%	1.72%

Table 3.S7

Canada and the U.S. Limit Offshore Imports According to the Current Canadian Formula.
N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	3.22%	3.25%	0.57%	0.57%	0.57%	0.57%	3.20%	3.25%	0.44%	0.69%
Quarte 1	2.98%	3.01%	0.53%	0.53%	0.52%	0.53%	2.96%	3.01%	0.40%	0.66%
2	3.09%	3.12%	0.50%	0.50%	0.50%	0.50%	3.07%	3.12%	0.42%	0.68%
3	4.34%	4.38%	0.82%	0.83%	0.82%	0.83%	4.30%	4.38%	0.44%	0.63%
4	2.64%	2.66%	0.45%	0.46%	0.45%	0.46%	2.62%	2.66%	0.50%	0.77%
Minimum	1.28%	1.29%	-0.11%	-0.12%	-0.11%	-0.12%	1.27%	1.29%	0.00%	0.00%
Maximum	6.67%	6.75%	1.47%	1.48%	1.46%	1.48%	6.61%	6.75%	0.85%	1.28%

QUANTITY:

	SUPPLIED:								TRADED:			
	Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	0.25%	0.27%	-0.04%	-0.42%	0.25%	0.27%	0.05%	-0.12%	-29.13%	-6.30%	-7.92%	0.11%
Quarter 1	0.23%	0.26%	-0.03%	-0.32%	0.23%	0.27%	0.05%	-0.12%	-29.53%	-6.32%	-6.41%	0.08%
2	0.29%	0.29%	-0.04%	-0.42%	0.30%	0.30%	0.06%	-0.09%	-29.33%	-6.26%	-9.24%	0.11%
3	0.23%	0.26%	-0.04%	-0.53%	0.23%	0.26%	0.04%	-0.15%	-28.77%	-6.40%	-9.17%	0.11%
4	0.24%	0.26%	-0.05%	-0.45%	0.24%	0.26%	0.04%	-0.14%	-29.06%	-6.20%	-6.08%	0.19%
Minimum	0.00%	0.00%	-0.07%	-0.90%	0.00%	0.00%	0.00%	-0.27%	-46.00%	-8.00%	-22.63%	-0.00%
Maximum	0.54%	0.53%	0.00%	0.00%	0.54%	0.53%	0.11%	0.08%	-17.00%	-2.00%	4.12%	0.28%

Table 3.S8

Canada and the U.S. Limit Offshore Imports According to the Current Canadian and U.S. Formulae, Respectively; N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	2.39%	2.41%	0.41%	0.41%	0.41%	0.41%	2.37%	2.41%	0.33%	0.52%
Quarter 1	2.14%	2.16%	0.36%	0.36%	0.36%	0.36%	2.12%	2.16%	0.33%	0.54%
2	2.21%	2.23%	0.33%	0.33%	0.33%	0.33%	2.19%	2.23%	0.32%	0.52%
3	3.31%	3.35%	0.61%	0.61%	0.61%	0.61%	3.29%	3.30%	0.32%	0.45%
4	2.02%	2.04%	0.35%	0.36%	0.35%	0.36%	2.01%	2.04%	0.37%	0.56%
Minimum	-0.03%	-0.03%	-0.33%	-0.33%	-0.33%	-0.33%	-0.03%	-0.03%	0.00%	0.00%
Maximum	6.34%	6.42%	1.74%	1.76%	1.73%	1.76%	6.29%	6.42%	0.90%	1.44%

QUANTITY:	SUPPLIED:								TRADED:			
	Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	0.19%	0.21%	-0.03%	-0.33%	0.19%	0.21%	0.04%	-0.10%	-29.13%	-4.23%	-10.28%	0.09%
Quarte 1	0.18%	0.21%	-0.03%	-0.26%	0.18%	0.21%	0.04%	-0.10%	-29.53%	-4.04%	-8.04%	0.07%
2	0.23%	0.23%	-0.03%	-0.33%	0.23%	0.23%	0.05%	-0.08%	-29.33%	-3.96%	-11.72%	0.09%
3	0.19%	0.21%	-0.03%	-0.42%	0.19%	0.21%	0.03%	-0.12%	-28.77%	-4.50%	-11.22%	0.09%
4	0.18%	0.20%	-0.04%	-0.35%	0.18%	0.19%	0.03%	-0.12%	-29.08%	-4.38%	-8.59%	0.16%
Minimum	0.00%	0.00%	-0.07%	-0.07%	0.00%	0.00%	0.00%	-0.31%	-46.00%	-9.00%	-27.93%	-0.00%
Maximum	0.55%	0.55%	0.00%	0.00%	0.55%	0.55%	0.13%	0.10%	-17.00%	2.00%	-2.52%	0.30%

Table 3.59

Canada and the U.S. Limit Offshore Imports According to a Formula Based on th Canadian Production Trigger and the Leading 5/8 Cow Marketing Share Female Trigger, N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		1.59%	1.60%	0.30%	0.31%	0.30%	0.31%	1.58%	1.60%	0.21%	0.33%
Quarter	1	1.65%	1.66%	0.32%	0.33%	0.32%	0.33%	1.64%	1.66%	0.13%	0.22%
	2	1.94%	1.96%	0.39%	0.39%	0.38%	0.39%	1.93%	1.96%	0.19%	0.30%
	3	1.90%	1.92%	0.40%	0.40%	0.40%	0.40%	1.89%	1.92%	0.26%	0.37%
	4	0.91%	0.92%	0.12%	0.12%	0.11%	0.12%	0.91%	0.92%	0.27%	0.41%
Minimum		-4.05%	-4.10%	-1.11%	-1.12%	-1.11%	-1.12%	-4.02%	-4.10%	-0.59%	-0.95%
Maximum		7.21%	7.20%	1.51%	1.53%	1.51%	1.53%	7.15%	7.20%	1.04%	1.58%

QUANTITY: SUPPLIED: / TRADED:

		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		0.10%	0.11%	-0.01%	-0.10%	0.11%	0.12%	0.02%	-0.04%	-28.05%	-2.55%	-12.16%	0.02%
Quarter	1	0.11%	0.12%	-0.01%	-0.11%	0.11%	0.12%	0.03%	-0.03%	-29.90%	-3.20%	-10.40%	0.02%
	2	0.13%	0.13%	-0.02%	-0.17%	0.14%	0.13%	0.03%	-0.02%	-29.65%	-3.57%	-12.73%	0.02%
	3	0.07%	0.08%	-0.01%	-0.20%	0.08%	0.08%	0.01%	-0.07%	-26.90%	-2.02%	-13.10%	0.02%
	4	0.10%	0.11%	-0.02%	-0.10%	0.11%	0.12%	0.02%	-0.05%	-27.74%	-1.61%	-12.04%	0.03%
Minimum		-0.30%	-0.30%	-0.09%	-1.10%	-0.30%	-0.30%	-0.00%	-0.41%	-51.00%	-13.00%	-14.60%	-0.11%
Maximum		0.67%	0.67%	0.05%	0.59%	0.67%	0.67%	0.13%	0.21%	-16.00%	0.00%	5.03%	0.15%

Table 3.S10

Canada and the U.S. Limit Offshore Imports According to a Formula Based on the Canadian Production Trigger and the U.S. Female Trigger, N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		3.00%	3.03%	0.54%	0.54%	0.53%	0.54%	2.98%	3.03%	0.41%	0.60%
Quarter	1	2.71%	2.74%	0.48%	0.49%	0.48%	0.49%	2.70%	2.74%	0.38%	0.62%
	2	2.82%	2.85%	0.46%	0.46%	0.46%	0.46%	2.81%	2.85%	0.39%	0.60%
	3	4.10%	4.14%	0.78%	0.78%	0.77%	0.78%	4.07%	4.14%	0.41%	0.59%
	4	2.53%	2.55%	0.45%	0.45%	0.44%	0.45%	2.51%	2.55%	0.47%	0.72%
Minimum		1.01%	1.02%	-0.34%	-0.34%	-0.34%	-0.34%	1.01%	1.02%	0.00%	0.00%
Maximum		6.95%	7.05%	1.91%	1.93%	1.90%	1.93%	6.91%	7.05%	0.99%	1.58%

QUANTITY:		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		0.23%	0.25%	-0.04%	-0.39%	0.23%	0.25%	0.04%	-0.12%	-31.38%	-5.61%	-9.05%	0.11%
Quarter	1	0.21%	0.24%	-0.03%	-0.30%	0.21%	0.24%	0.04%	-0.11%	-31.82%	-5.43%	-8.37%	0.08%
	2	0.27%	0.27%	-0.04%	-0.39%	0.27%	0.27%	0.05%	-0.09%	-31.44%	-5.38%	-11.43%	0.10%
	3	0.22%	0.24%	-0.04%	-0.49%	0.22%	0.24%	0.04%	-0.13%	-30.96%	-5.82%	-11.01%	0.10%
	4	0.22%	0.24%	-0.04%	-0.42%	0.22%	0.24%	0.04%	-0.13%	-31.27%	-5.77%	-7.81%	0.18%
Minimum		0.00%	0.00%	-0.08%	-0.96%	0.00%	0.00%	0.00%	-0.34%	-40.00%	-10.00%	-25.12%	-0.01%
Maximum		0.60%	0.60%	0.00%	0.00%	0.60%	0.60%	0.14%	0.11%	-20.00%	-1.00%	-2.38%	0.33%

Table 3.S11

U.S. Places $5.00/cwt Tariffs on Low and High Quality Beef from Canada

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-4.39%	-4.43%	-2.35%	-2.37%	-2.34%	-2.37%	-4.36%	-4.43%	-1.68%	-2.60%
Quarter	1	-4.24%	-4.28%	-2.34%	-2.36%	-2.33%	-2.36%	-4.21%	-4.28%	-1.42%	-2.33%
	2	-4.16%	-4.20%	-2.22%	-2.24%	-2.21%	-2.24%	-4.13%	-4.20%	-1.63%	-2.65%
	3	-5.03%	-5.09%	-2.64%	-2.67%	-2.63%	-2.67%	-4.99%	-5.09%	-1.83%	-2.61%
	4	-4.22%	-4.26%	-2.22%	-2.23%	-2.21%	-2.23%	-4.19%	-4.26%	-1.85%	-2.81%
Minimum		-5.90%	-5.97%	-4.26%	-4.30%	-4.24%	-4.30%	-5.85%	-5.97%	-2.49%	-3.98%
Maximum		-2.72%	-2.75%	-1.20%	-1.21%	-1.20%	-1.21%	-2.71%	-2.75%	0.00%	0.00%

QUANTITY:

		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-0.89%	-0.96%	0.14%	1.47%	-0.90%	-0.96%	-0.10%	0.42%	0.00%	0.00%	-6.25%	4.39%
Quarter	1	-0.85%	-0.97%	0.12%	1.10%	-0.86%	-0.98%	-0.10%	0.42%	0.00%	0.00%	-5.91%	3.95%
	2	-0.93%	-0.93%	0.13%	1.40%	-0.95%	-0.94%	-0.18%	0.37%	0.00%	0.00%	-5.78%	4.07%
	3	-0.83%	-0.91%	0.14%	1.82%	-0.84%	-0.91%	-0.15%	0.48%	0.00%	0.00%	-4.04%	4.98%
	4	-0.95%	-1.02%	0.17%	1.64%	-0.96%	-1.02%	-0.19%	0.42%	0.00%	0.00%	-9.27%	5.19%
Minimum		-1.54%	-1.52%	0.00%	0.00%	-1.54%	-1.52%	-0.34%	-0.35%	0.00%	0.00%	-10.58%	3.44%
Maximum		0.00%	0.00%	0.22%	2.47%	0.00%	0.00%	0.00%	0.73%	0.00%	0.00%	-3.02%	11.25%

Table 3.S12

U.S. Places $5.00/cwt Tariffs on Low Quality Beef from Canada

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-4.66%	-4.91%	-0.03%	-0.03%	-0.03%	-0.03%	-4.83%	-4.91%	-0.02%	-0.02%
Quarter	1	-4.69%	-4.76%	0.01%	0.01%	0.01%	0.01%	-4.66%	-4.76%	-0.04%	-0.06%
	2	-4.70%	-4.76%	-0.01%	-0.01%	-0.01%	-0.01%	-4.66%	-4.76%	-0.02%	-0.03%
	3	-5.39%	-5.45%	0.05%	0.05%	0.05%	0.05%	-5.34%	-5.45%	-0.02%	-0.02%
	4	-4.76%	-4.79%	-0.17%	-0.17%	-0.17%	-0.17%	-4.71%	-4.79%	0.01%	0.01%
Minimum		-5.90%	-5.97%	-0.20%	-0.20%	-0.19%	-0.20%	-5.85%	-5.97%	-0.06%	-0.10%
Maximum		-3.81%	-3.83%	0.07%	0.07%	0.07%	0.07%	-3.79%	-3.83%	0.01%	0.02%

QUANTITY:

		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-0.01%	-0.01%	0.00%	0.01%	-0.01%	-0.01%	-0.00%	0.00%	0.00%	0.00%	-13.75%	4.36%
Quarter	1	-0.01%	-0.01%	0.00%	0.01%	-0.01%	-0.01%	-0.00%	0.00%	0.00%	0.00%	-13.66%	3.39%
	2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	-13.07%	3.63%
	3	-0.03%	-0.03%	0.04%	0.02%	-0.03%	-0.03%	-0.01%	-0.01%	0.00%	0.00%	-11.46%	4.25%
	4	-0.01%	-0.01%	0.00%	0.02%	-0.01%	-0.01%	-0.00%	0.00%	0.00%	0.00%	-10.26%	7.31%
Minimum		-0.04%	-0.04%	0.00%	0.00%	-0.04%	-0.04%	-0.01%	-0.02%	0.00%	0.00%	-20.80%	3.07%
Maximum		0.00%	0.01%	0.00%	0.03%	0.00%	0.01%	0.00%	0.02%	0.00%	0.00%	-8.75%	8.96%

Table 3.S13

U.S. Limits Imports from Canada to 10 Percent of all U.S. Imports
No Change in Imports from Offshore Sources

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-3.50%	-3.61%	-0.69%	-0.70%	-0.69%	-0.70%	-3.55%	-3.61%	-0.51%	-0.79%
Quarter	1	-3.51%	-3.54%	-0.70%	-0.70%	-0.69%	-0.70%	-3.49%	-3.54%	-0.40%	-0.68%
	2	-3.55%	-3.58%	-0.65%	-0.66%	-0.65%	-0.66%	-3.53%	-3.58%	-0.47%	-0.77%
	3	-4.98%	-5.03%	-1.05%	-1.06%	-1.04%	-1.06%	-4.94%	-5.02%	-0.53%	-0.70%
	4	-2.48%	-2.50%	-0.40%	-0.40%	-0.39%	-0.40%	-2.48%	-2.50%	-0.63%	-0.99%
Minimum		-5.78%	-5.84%	-1.59%	-1.60%	-1.58%	-1.60%	-5.72%	-5.86%	-0.78%	-1.28%
Maximum		-2.02%	-2.04%	-0.26%	-0.26%	-0.26%	-0.26%	-2.01%	-2.04%	0.00%	0.00%

QUANTITY:

		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-0.26%	-0.29%	0.04%	0.45%	-0.26%	-0.29%	-0.06%	0.13%	0.00%	0.00%	-10.00%	0.22%
Quarter	1	-0.25%	-0.28%	0.04%	0.35%	-0.25%	-0.29%	-0.05%	0.12%	0.00%	0.00%	-10.00%	0.10%
	2	-0.32%	-0.32%	0.04%	0.45%	-0.32%	-0.32%	-0.07%	0.10%	0.00%	0.00%	-10.00%	0.21%
	3	-0.22%	-0.25%	0.04%	0.56%	-0.23%	-0.25%	-0.04%	0.17%	0.00%	0.00%	-10.00%	0.19%
	4	-0.27%	-0.29%	0.05%	0.49%	-0.27%	-0.29%	-0.05%	0.14%	0.00%	0.00%	-10.00%	0.43%
Minimum		-0.48%	-0.48%	0.00%	0.00%	-0.48%	-0.48%	-0.11%	-0.11%	0.00%	0.00%	-10.00%	-0.01%
Maximum		0.00%	0.00%	0.06%	0.83%	0.00%	0.00%	0.00%	0.38%	0.00%	0.00%	-10.00%	0.55%

Table 3.S14

U.S. Limits Imports from Canada to 5 Percent of all U.S. Imports
No Change in Imports from Offshore Sources

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-17.89%	-18.07%	-3.45%	-3.48%	-3.43%	-3.48%	-17.77%	-18.07%	-2.54%	-3.93%
Quarter	1	-17.56%	-17.72%	-3.49%	-3.51%	-3.48%	-3.51%	-17.44%	-17.72%	-2.00%	-3.29%
	2	-17.75%	-17.92%	-3.20%	-3.20%	-3.24%	-3.20%	-17.63%	-17.92%	-2.30%	-3.83%
	3	-24.90%	-25.17%	-5.24%	-5.29%	-5.21%	-5.29%	-24.71%	-25.17%	-2.67%	-3.80%
	4	-12.30%	-12.50%	-1.90%	-2.00%	-1.97%	-2.00%	-12.30%	-12.50%	-3.13%	-4.70%
Minimum		-28.88%	-29.22%	-7.94%	-8.01%	-7.89%	-8.01%	-28.64%	-29.22%	-3.89%	-6.23%
Maximum		-10.10%	-10.20%	-1.31%	-1.32%	-1.31%	-1.32%	-10.04%	-10.20%	0.00%	0.00%

QUANTITY:		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-1.31%	-1.43%	0.21%	2.25%	-1.32%	-1.44%	-0.25%	0.67%	0.00%	0.00%	-50.00%	1.10%
Quarter	1	-1.24%	-1.42%	0.10%	1.70%	-1.25%	-1.44%	-0.26%	0.64%	0.00%	0.00%	-50.00%	0.83%
	2	-1.60%	-1.60%	0.21%	2.27%	-1.60%	-1.60%	-0.33%	0.48%	0.00%	0.00%	-50.00%	1.09%
	3	-1.12%	-1.25%	0.21%	2.70%	-1.13%	-1.26%	-0.10%	0.00%	0.00%	0.00%	-50.00%	0.90%
	4	-1.34%	-1.46%	0.25%	2.44%	-1.34%	-1.48%	-0.25%	0.09%	0.00%	0.00%	-50.00%	2.23%
Minimum		-2.36%	-2.40%	0.00%	0.00%	-2.38%	-2.40%	-0.55%	-0.53%	0.00%	0.00%	-50.00%	-0.01%
Maximum		0.00%	0.00%	0.31%	4.15%	0.00%	0.00%	0.00%	1.40%	0.00%	0.00%	-50.00%	3.06%

Table 3.S15

Canada's Imports of Offshore Beef Increase by 10 Percent, N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	-0.21%	-0.21%	-0.04%	-0.04%	-0.04%	-0.04%	-0.21%	-0.21%	-0.03%	-0.04%
Quarter 1	-0.18%	-0.18%	-0.03%	-0.03%	-0.03%	-0.03%	-0.18%	-0.18%	-0.02%	-0.04%
2	-0.21%	-0.22%	-0.04%	-0.04%	-0.04%	-0.04%	-0.21%	-0.22%	-0.03%	-0.04%
3	-0.30%	-0.31%	-0.06%	-0.06%	-0.06%	-0.06%	-0.30%	-0.31%	-0.03%	-0.04%
4	-0.15%	-0.15%	-0.02%	-0.02%	-0.02%	-0.02%	-0.15%	-0.15%	-0.04%	-0.05%
Minimum	-0.42%	-0.42%	-0.11%	-0.11%	-0.11%	-0.11%	-0.41%	-0.42%	-0.05%	-0.08%
Maximum	-0.10%	-5.10%	-0.01%	-0.01%	-0.01%	-0.01%	-0.10%	-0.10%	0.00%	0.00%

QUANTITY:

	SUPPLIED:								TRADED:			
	Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	-0.01%	-0.02%	0.00%	0.02%	-0.01%	-0.02%	-0.00%	0.01%	10.00%	0.00%	5.20%	-0.01%
Quarter 1	-0.01%	-0.02%	0.00%	0.02%	-0.01%	-0.02%	-0.00%	0.01%	10.00%	0.00%	4.55%	-0.01%
2	-0.02%	-0.02%	0.00%	0.02%	-0.02%	-0.02%	-0.00%	0.00%	10.00%	0.00%	5.53%	-0.01%
3	-0.01%	-0.02%	0.00%	0.03%	-0.01%	-0.02%	-0.00%	0.01%	10.00%	0.00%	5.04%	-0.01%
4	-0.01%	-0.02%	0.00%	0.03%	-0.01%	-0.02%	-0.00%	0.01%	10.00%	0.00%	5.12%	-0.01%
Minimum	-0.03%	-0.03%	0.00%	0.00%	-0.03%	-0.03%	-0.01%	-0.01%	10.00%	0.00%	3.11%	-0.02%
Maximum	0.00%	0.00%	0.00%	0.05%	0.00%	0.00%	0.00%	0.02%	10.00%	0.00%	7.32%	0.00%

Table 3.S16

Canada's Imports of Offshore Beef Increase by 20 Percent, N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-0.41%	-0.42%	-0.08%	-0.08%	-0.08%	-0.08%	-0.41%	-0.42%	-0.08%	-0.09%
Quarter	1	-0.30%	-0.30%	-0.06%	-0.06%	-0.06%	-0.06%	-0.35%	-0.30%	-0.05%	-0.08%
	2	-0.42%	-0.43%	-0.07%	-0.07%	-0.07%	-0.07%	-0.42%	-0.43%	-0.05%	-0.08%
	3	-0.61%	-0.61%	-0.12%	-0.13%	-0.12%	-0.12%	-0.60%	-0.61%	-0.06%	-0.08%
	4	-0.29%	-0.30%	-0.05%	-0.05%	-0.05%	-0.05%	-0.29%	-0.30%	-0.07%	-0.11%
Minimum		-0.83%	-0.84%	-0.21%	-0.21%	-0.21%	-0.21%	-0.83%	-0.84%	-0.10%	-0.10%
Maximum		-0.19%	-0.10%	-0.01%	-0.01%	-0.01%	-0.01%	-0.19%	-0.10%	0.00%	0.00%

QUANTITY:		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-0.03%	-0.03%	0.00%	0.00%	-0.03%	-0.03%	-0.01%	0.02%	20.00%	0.00%	10.51%	-0.01%
Quarter	1	-0.02%	-0.02%	0.00%	0.04%	-0.02%	-0.03%	-0.01%	0.01%	20.00%	0.00%	9.11%	-0.01%
	2	-0.04%	-0.04%	0.00%	0.03%	-0.04%	-0.04%	-0.01%	0.01%	20.00%	0.00%	11.06%	-0.01%
	3	-0.03%	-0.03%	0.50%	0.07%	-0.03%	-0.03%	-0.00%	0.02%	20.00%	0.00%	11.20%	-0.01%
	4	-0.03%	-0.01%	0.01%	0.00%	-0.03%	-0.03%	-0.01%	0.02%	20.00%	0.00%	10.24%	-0.00%
Minimum		-0.08%	-0.08%	0.00%	0.00%	-0.08%	-0.08%	-0.01%	-0.01%	20.00%	0.00%	6.21%	-0.02%
Maximum		0.00%	0.00%	0.01%	0.10%	0.00%	0.00%	0.00%	0.02%	20.00%	0.00%	14.04%	0.00%

Table 3.S17

Canada's Imports of Offshore Beef Increase by 50 Percent. N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	-1.03%	-1.04%	-0.19%	-0.19%	-0.19%	-0.19%	-1.03%	-1.04%	-0.14%	-0.22%
Quarter 1	-0.89%	-0.90%	-0.16%	-0.16%	-0.16%	-0.16%	-0.88%	-0.90%	-0.12%	-0.20%
2	-1.07%	-1.08%	-0.18%	-0.19%	-0.18%	-0.19%	-1.06%	-1.08%	-0.13%	-0.21%
3	-1.52%	-1.53%	-0.31%	-0.31%	-0.31%	-0.31%	-1.50%	-1.53%	-0.15%	-0.21%
4	-0.73%	-0.74%	-0.12%	-0.12%	-0.12%	-0.12%	-0.73%	-0.74%	-0.18%	-0.27%
Minimum	-2.08%	-2.10%	-0.53%	-0.54%	-0.53%	-0.54%	-2.06%	-2.10%	-0.25%	-0.40%
Maximum	-0.48%	-0.48%	-0.03%	-0.03%	-0.03%	-0.03%	-0.48%	-0.48%	0.00%	0.00%

QUANTITY:	SUPPLIED:								TRADED:			
	Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	-0.07%	-0.08%	0.01%	0.13%	-0.07%	-0.08%	-0.01%	0.04%	50.00%	0.00%	26.27%	-0.03%
Quarter 1	-0.07%	-0.08%	0.01%	0.10%	-0.07%	-0.08%	-0.01%	0.04%	50.00%	0.00%	22.77%	-0.03%
2	-0.09%	-0.09%	0.01%	0.13%	-0.09%	-0.09%	-0.02%	0.02%	50.00%	0.00%	27.66%	-0.04%
3	-0.07%	-0.08%	0.01%	0.16%	-0.07%	-0.08%	-0.01%	0.05%	50.00%	0.00%	28.19%	-0.03%
4	-0.07%	-0.08%	0.01%	0.14%	-0.07%	-0.08%	-0.01%	0.04%	50.00%	0.00%	25.59%	-0.06%
Minimum	-0.15%	-0.16%	0.00%	0.00%	-0.15%	-0.16%	-0.04%	-0.03%	50.00%	0.00%	15.54%	-0.08%
Maximum	0.00%	0.00%	0.02%	0.25%	0.00%	0.00%	0.00%	0.08%	50.00%	0.00%	36.61%	0.00%

Table 3.S18

Canada's Offshore Imports Increase by 10 Percent. U.S. Limits Imports from Canada to 10 Percent of All U.S. Imports

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-5.66%	-5.72%	-1.09%	-1.09%	-1.08%	-1.09%	-5.62%	-5.72%	-0.81%	-1.25%
Quarter	1	-5.28%	-5.33%	-1.02%	-1.03%	-1.02%	-1.03%	-5.25%	-5.33%	-0.65%	-1.08%
	2	-5.72%	-5.77%	-1.04%	-1.05%	-1.04%	-1.05%	-5.68%	-5.77%	-0.73%	-1.19%
	3	-8.08%	-8.17%	-1.70%	-1.71%	-1.69%	-1.71%	-8.02%	-8.17%	-0.84%	-1.20%
	4	-3.91%	-3.95%	-0.64%	-0.64%	-0.63%	-0.64%	-3.89%	-3.95%	-1.00%	-1.52%
Minimum		-9.85%	-9.97%	-2.71%	-2.73%	-2.69%	-2.73%	-9.77%	-9.97%	-1.31%	-2.10%
Maximum		-3.52%	-3.55%	-0.38%	-0.39%	-0.38%	-0.39%	-3.50%	-3.55%	0.00%	0.00%

QUANTITY:

		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-0.42%	-0.46%	0.07%	0.72%	-0.42%	-0.46%	-0.08%	0.22%	10.00%	0.00%	-10.00%	0.36%
Quarter	1	-0.39%	-0.45%	0.06%	0.55%	-0.39%	-0.45%	-0.08%	0.20%	10.00%	0.00%	-10.00%	0.26%
	2	-0.52%	-0.52%	0.07%	0.73%	-0.52%	-0.52%	-0.11%	0.15%	10.00%	0.00%	-10.00%	0.35%
	3	-0.37%	-0.41%	0.07%	0.90%	-0.37%	-0.41%	-0.06%	0.28%	10.00%	0.00%	-10.00%	0.31%
	4	-0.41%	-0.45%	0.08%	0.78%	-0.41%	-0.45%	-0.08%	0.23%	10.00%	0.00%	-10.00%	0.69%
Minimum		-0.80%	-0.81%	0.00%	0.00%	-0.80%	-0.81%	-0.19%	-0.16%	10.00%	0.00%	-10.00%	-0.01%
Maximum		0.00%	0.00%	0.10%	1.26%	0.00%	0.00%	0.00%	0.40%	10.00%	0.00%	-10.00%	0.86%

Table 3.S19

Canada's Offshore Imports Increase by 20 Percent. U.S. Limits Imports from Canada to 10 Percent of All U.S. Imports

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-7.74%	-7.82%	-1.48%	-1.49%	-1.47%	-1.49%	-7.69%	-7.82%	-1.11%	-1.72%
Quarter	1	-7.06%	-7.12%	-1.35%	-1.36%	-1.34%	-1.36%	-7.01%	-7.12%	-0.91%	-1.49%
	2	-7.88%	-7.95%	-1.43%	-1.44%	-1.43%	-1.44%	-7.83%	-7.95%	-1.00%	-1.62%
	3	-11.18%	-11.31%	-2.35%	-2.37%	-2.33%	-2.37%	-11.10%	-11.31%	-1.15%	-1.64%
	4	-5.35%	-5.40%	-0.88%	-0.88%	-0.87%	-0.88%	-5.31%	-5.40%	-1.37%	-2.09%
Minimum		-13.92%	-14.09%	-3.83%	-3.86%	-3.80%	-3.86%	-13.81%	-14.09%	-1.84%	-2.95%
Maximum		-4.68%	-4.73%	-0.48%	-0.48%	-0.48%	-0.48%	-4.65%	-4.73%	0.00%	0.00%

QUANTITY:

		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-0.57%	-0.63%	0.09%	1.00%	-0.58%	-0.63%	-0.11%	0.30%	20.00%	0.00%	-10.00%	0.50%
Quarter	1	-0.53%	-0.61%	0.08%	0.76%	-0.54%	-0.62%	-0.11%	0.28%	20.00%	0.00%	-10.00%	0.36%
	2	-0.72%	-0.72%	0.09%	1.01%	-0.72%	-0.72%	-0.15%	0.20%	20.00%	0.00%	-10.00%	0.49%
	3	-0.51%	-0.57%	0.09%	1.25%	-0.51%	-0.57%	-0.08%	0.38%	20.00%	0.00%	-10.00%	0.43%
	4	-0.56%	-0.62%	0.11%	1.07%	-0.56%	-0.62%	-0.10%	0.33%	20.00%	0.00%	-10.00%	0.94%
Minimum		-1.12%	-1.13%	0.00%	0.00%	-1.12%	-1.13%	-0.26%	-0.22%	20.00%	0.00%	-10.00%	-0.01%
Maximum		0.00%	0.00%	0.14%	1.76%	0.00%	0.00%	0.00%	0.53%	20.00%	0.00%	-10.00%	1.18%

Table 3.S20

Canada's Offshore Imports Increase by 50 Percent. U.S. Limits Imports from Canada to 10 Percent of All U.S. Imports

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-13.99%	-14.13%	-2.67%	-2.69%	-2.66%	-2.69%	-13.89%	-14.13%	-2.01%	-3.12%
Quarter	1	-12.38%	-12.49%	-2.33%	-2.35%	-2.32%	-2.35%	-12.29%	-12.49%	-1.67%	-2.75%
	2	-14.38%	-14.51%	-2.61%	-2.63%	-2.60%	-2.63%	-14.28%	-14.51%	-1.79%	-2.91%
	3	-20.49%	-20.71%	-4.30%	-4.33%	-4.27%	-4.33%	-20.33%	-20.71%	-2.07%	-2.95%
	4	-9.65%	-9.74%	-1.60%	-1.61%	-1.59%	-1.61%	-9.59%	-9.74%	-2.50%	-3.81%
Minimum		-26.62%	-26.93%	-7.19%	-7.25%	-7.14%	-7.25%	-26.41%	-26.93%	-3.44%	-5.50%
Maximum		-7.91%	-7.99%	-0.76%	-0.77%	-0.76%	-0.77%	-7.85%	-7.99%	0.00%	0.00%

QUANTITY:

		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-1.04%	-1.14%	0.17%	1.82%	-1.05%	-1.15%	-0.20%	0.54%	50.00%	0.00%	-10.00%	0.91%
Quarter	1	-0.96%	-1.11%	0.14%	1.38%	-0.97%	-1.12%	-0.20%	0.51%	50.00%	0.00%	-10.00%	0.65%
	2	-1.31%	-1.32%	0.17%	1.84%	-1.32%	-1.33%	-0.27%	0.36%	50.00%	0.00%	-10.00%	0.91%
	3	-0.93%	-1.05%	0.17%	2.29%	-0.94%	-1.05%	-0.15%	0.69%	50.00%	0.00%	-10.00%	0.80%
	4	-1.01%	-1.10%	0.20%	1.93%	-1.00%	-1.10%	-0.18%	0.61%	50.00%	0.00%	-10.00%	1.69%
Minimum		-2.09%	-2.11%	0.00%	0.00%	-2.09%	-2.11%	-0.49%	-0.39%	50.00%	0.00%	-10.00%	-0.01%
Maximum		0.00%	0.00%	0.27%	3.33%	0.00%	0.00%	0.00%	1.04%	50.00%	0.00%	-10.00%	2.15%

Table 3.S21

Canada's Offshore Imports Increase by 10 Percent. U.S. Limits Imports from Canada to 5 Percent of All U.S. Imports

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-19.97%	-20.17%	-3.85%	-3.88%	-3.83%	-3.88%	-19.84%	-20.17%	-2.84%	-4.40%
Quarter	1	-19.33%	-19.51%	-3.81%	-3.84%	-3.79%	-3.84%	-19.20%	-19.51%	-2.25%	-3.71%
	2	-19.92%	-20.10%	-3.65%	-3.68%	-3.63%	-3.68%	-19.78%	-20.10%	-2.62%	-4.26%
	3	-28.00%	-28.31%	-5.89%	-5.94%	-5.86%	-5.94%	-27.79%	-28.31%	-2.97%	-4.24%
	4	-13.82%	-13.95%	-2.22%	-2.24%	-2.21%	-2.24%	-13.73%	-13.95%	-3.50%	-5.33%
Minimum		-32.95%	-33.35%	-9.06%	-9.14%	-9.00%	-9.14%	-32.68%	-33.35%	-4.43%	-7.08%
Maximum		-11.74%	-11.85%	-1.54%	-1.55%	-1.54%	-1.55%	-11.66%	-11.85%	0.00%	0.00%

QUANTITY:

		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-1.47%	-1.60%	0.23%	2.53%	-1.47%	-1.61%	-0.28%	0.75%	10.00%	0.00%	-50.00%	1.27%
Quarter	1	-1.38%	-1.59%	0.20%	1.95%	-1.40%	-1.60%	-0.29%	0.72%	10.00%	0.00%	-50.00%	0.93%
	2	-1.79%	-1.80%	0.23%	2.55%	-1.80%	-1.80%	-0.37%	0.53%	10.00%	0.00%	-50.00%	1.23%
	3	-1.26%	-1.41%	0.23%	3.14%	-1.27%	-1.42%	-0.21%	0.97%	10.00%	0.00%	-50.00%	1.09%
	4	-1.48%	-1.62%	0.28%	2.73%	-1.49%	-1.62%	-0.28%	0.79%	10.00%	0.00%	-50.00%	2.48%
Minimum		-2.70%	-2.73%	0.00%	0.00%	-2.70%	-2.73%	-0.63%	-0.59%	10.00%	0.00%	-50.00%	-0.01%
Maximum		0.00%	0.00%	0.35%	4.58%	0.00%	0.00%	0.00%	1.52%	10.00%	0.00%	-50.00%	3.12%

Table 3.S22

Canada's Offshore Imports Increase by 20 Percent. U.S. Limits Imports from Canada to 5 Percent of All U.S. Imports

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-22.06%	-22.27%	-4.24%	-4.27%	-4.22%	-4.27%	-21.91%	-22.27%	-3.14%	-4.87%
Quarter	1	-21.10%	-21.30%	-4.14%	-4.17%	-4.12%	-4.17%	-20.96%	-21.30%	-2.50%	-4.13%
	2	-22.08%	-22.29%	-4.04%	-4.07%	-4.02%	-4.07%	-21.93%	-22.29%	-2.88%	-4.69%
	3	-31.10%	-31.44%	-6.54%	-6.59%	-6.51%	-6.59%	-30.86%	-31.44%	-3.28%	-4.67%
	4	-15.25%	-15.40%	-2.46%	-2.48%	-2.45%	-2.48%	-15.15%	-15.40%	-3.88%	-5.90%
Minimum		-37.03%	-37.47%	-10.18%	-10.27%	-10.12%	-10.27%	-36.72%	-37.47%	-4.96%	-7.93%
Maximum		-13.38%	-13.51%	-1.64%	-1.65%	-1.63%	-1.65%	-13.29%	-13.51%	0.00%	0.00%

QUANTITY:

		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-1.63%	-1.77%	0.26%	2.80%	-1.63%	-1.78%	-0.31%	0.83%	20.00%	0.00%	-50.00%	1.41%
Quarter	1	-1.52%	-1.75%	0.22%	2.15%	-1.54%	-1.77%	-0.32%	0.79%	20.00%	0.00%	-50.00%	1.03%
	2	-1.99%	-2.00%	0.26%	2.83%	-2.00%	-2.01%	-0.41%	0.58%	20.00%	0.00%	-50.00%	1.37%
	3	-1.41%	-1.57%	0.26%	3.48%	-1.41%	-1.58%	-0.23%	1.07%	20.00%	0.00%	-50.00%	1.21%
	4	-1.63%	-1.78%	0.31%	3.01%	-1.63%	-1.78%	-0.30%	0.88%	20.00%	0.00%	-50.00%	2.73%
Minimum		-3.03%	-3.05%	0.00%	0.00%	-3.03%	-3.05%	-0.70%	-0.65%	20.00%	0.00%	-50.00%	-0.01%
Maximum		0.00%	0.00%	0.39%	5.01%	0.00%	0.00%	0.00%	1.64%	20.00%	0.00%	-50.00%	3.38%

TAble 3.S23

Canada's Offshore Imports Increase by 50 Percent. U.S. Limits Imports from Canada to 5 Percent of All U.S. Imports

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-28.30%	-28.58%	-5.43%	-5.47%	-5.40%	-5.47%	-28.11%	-28.58%	-4.04%	-6.27%
Quarter	1	-26.42%	-26.67%	-5.12%	-5.15%	-5.09%	-5.15%	-26.25%	-26.67%	-3.26%	-5.38%
	2	-28.58%	-28.85%	-5.22%	-5.25%	-5.19%	-5.25%	-28.39%	-28.85%	-3.67%	-5.97%
	3	-40.41%	-40.85%	-8.49%	-8.56%	-8.44%	-8.56%	-40.10%	-40.85%	-4.21%	-5.99%
	4	-19.56%	-19.74%	-3.18%	-3.20%	-3.17%	-3.20%	-19.43%	-19.74%	-5.00%	-7.61%
Minimum		-49.24%	-49.83%	-13.54%	-13.65%	-13.46%	-13.65%	-48.84%	-49.83%	-6.55%	-10.48%
Maximum		-17.61%	-17.77%	-1.92%	-1.93%	-1.91%	-1.93%	-17.49%	-17.77%	0.00%	0.00%

QUANTITY:		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-2.09%	-2.29%	0.33%	3.62%	-2.10%	-2.30%	-0.40%	1.08%	50.00%	0.00%	-50.00%	1.82%
Quarter	1	-1.95%	-2.25%	0.28%	2.77%	-1.97%	-2.27%	-0.40%	1.02%	50.00%	0.00%	-50.00%	1.32%
	2	-2.59%	-2.60%	0.33%	3.66%	-2.60%	-2.61%	-0.53%	0.74%	50.00%	0.00%	-50.00%	1.79%
	3	-1.83%	-2.05%	0.33%	4.52%	-1.84%	-2.06%	-0.30%	1.38%	50.00%	0.00%	-50.00%	1.58%
	4	-2.07%	-2.27%	0.40%	3.88%	-2.07%	-2.27%	-0.38%	1.17%	50.00%	0.00%	-50.00%	3.48%
Minimum		-3.99%	-4.03%	0.00%	0.00%	-3.99%	-4.03%	-0.93%	-0.82%	50.00%	0.00%	-50.00%	-0.01%
Maximum		0.00%	0.00%	0.52%	6.29%	0.00%	0.00%	0.00%	2.00%	50.00%	0.00%	-50.00%	4.30%

Table 3.S24

Canada Doubles Imports from Nicaragua. N.A. Free Trade

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	-0.18%	-0.18%	-0.04%	-0.04%	-0.04%	-0.04%	-0.18%	-0.18%	-0.02%	-0.04%
Quarter 1	-0.16%	-0.16%	-0.03%	-0.03%	-0.03%	-0.03%	-0.16%	-0.16%	-0.02%	-0.03%
2	-0.20%	-0.20%	-0.04%	-0.04%	-0.04%	-0.04%	-0.20%	-0.20%	-0.02%	-0.03%
3	-0.25%	-0.26%	-0.05%	-0.05%	-0.05%	-0.05%	-0.25%	-0.26%	-0.03%	-0.04%
4	-0.12%	-0.12%	-0.02%	-0.02%	-0.02%	-0.02%	-0.12%	-0.12%	-0.03%	-0.05%
Minimum	-0.38%	-0.38%	-0.09%	-0.09%	-0.09%	-0.09%	-0.37%	-0.38%	-0.05%	-0.08%
Maximum	-0.07%	-0.07%	-0.01%	-0.01%	-0.01%	-0.01%	-0.07%	-0.07%	0.00%	0.00%

QUANTITY:

	SUPPLIED:								TRADED:			
	Steers & Heifer		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	-0.01%	-0.01%	0.00%	0.02%	-0.01%	-0.01%	-0.00%	0.01%	8.84%	0.00%	4.65%	-0.01%
Quarter 1	-0.01%	-0.01%	0.00%	0.01%	-0.01%	-0.01%	-0.00%	0.01%	9.23%	0.00%	4.21%	-0.00%
2	-0.01%	-0.01%	0.00%	0.02%	-0.01%	-0.01%	-0.00%	0.00%	9.29%	0.00%	5.14%	-0.01%
3	-0.01%	-0.01%	0.00%	0.02%	-0.01%	-0.01%	-0.00%	0.01%	8.39%	0.00%	4.73%	-0.00%
4	-0.01%	-0.01%	0.00%	0.02%	-0.01%	-0.01%	-0.00%	0.01%	8.59%	0.00%	4.41%	-0.01%
Minimum	-0.02%	-0.02%	0.00%	0.00%	-0.02%	-0.02%	-0.00%	-0.00%	4.43%	0.00%	2.17%	-0.01%
Maximum	0.00%	0.00%	0.00%	0.04%	0.00%	0.00%	0.00%	0.01%	17.17%	0.00%	9.73%	0.00%

Table 3.S25

Canada's Imports of Nicaraguan Beef Double. U.S. Limits Imports from Canada to 10 Percent of All U.S. Imports

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-5.42%	-5.48%	-1.07%	-1.07%	-1.06%	-1.07%	-5.39%	-5.48%	-0.77%	-1.19%
Quarter	1	-5.16%	-5.20%	-1.04%	-1.04%	-1.03%	-1.04%	-5.12%	-5.20%	-0.58%	-0.96%
	2	-5.59%	-5.64%	-1.07%	-1.08%	-1.07%	-1.08%	-5.55%	-5.64%	-0.69%	-1.13%
	3	-7.58%	-7.67%	-1.62%	-1.63%	-1.61%	-1.63%	-7.52%	-7.67%	-0.83%	-1.18%
	4	-3.68%	-3.72%	-0.59%	-0.60%	-0.59%	-0.60%	-3.66%	-3.72%	-0.97%	-1.47%
Minimum		-9.00%	-9.10%	-2.08%	-2.10%	-2.07%	-2.10%	-8.92%	-9.10%	-1.11%	-1.68%
Maximum		-2.75%	-2.77%	-0.36%	-0.37%	-0.36%	[illegible]	-2.73%	-2.77%	0.00%	0.00%

QUANTITY:		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-0.38%	-0.42%	0.06%	0.65%	-0.38%	-0.42%	-0.07%	0.19%	8.82%	0.00%	-10.00%	0.33%
Quarter	1	-0.35%	-0.41%	0.05%	0.50%	-0.36%	-0.41%	-0.07%	0.18%	9.21%	0.00%	-10.00%	0.23%
	2	-0.46%	-0.47%	0.06%	0.66%	-0.47%	-0.47%	-0.10%	0.13%	9.27%	0.00%	-10.00%	0.31%
	3	-0.33%	-0.37%	0.06%	0.81%	-0.33%	-0.37%	-0.05%	0.25%	8.37%	0.00%	-10.00%	0.28%
	4	-0.39%	-0.43%	0.07%	0.71%	-0.40%	-0.43%	-0.08%	0.20%	8.58%	0.00%	-10.00%	0.65%
Minimum		-0.64%	-0.64%	0.00%	0.00%	-0.64%	-0.64%	-0.14%	-0.13%	4.43%	0.00%	-10.00%	-0.01%
Maximum		0.00%	0.00%	0.10%	1.22%	0.00%	0.00%	0.00%	0.38%	17.17%	0.00%	-10.00%	0.95%

Table 3.S26

Canada's Imports of Nicaraguan Beef Double. U.S. Limits Imports from Canada to 5 Percent of All U.S. Imports

Calculated as Percent Change Relative to Base:

PRICES:

		Low Quality Beef		High Quality Beef		Steers & Heifers		Cows & Bulls		Feeder Cattle	
		EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:		-19.74%	-19.93%	-3.83%	-3.86%	-3.81%	-3.86%	-19.60%	-19.93%	-2.80%	-4.34%
Quarter	1	-19.20%	-19.38%	-3.82%	-3.85%	-3.80%	-3.85%	-19.07%	-19.38%	-2.18%	-3.60%
	2	-19.79%	-19.97%	-3.68%	-3.71%	-3.66%	-3.71%	-19.66%	-19.97%	-2.58%	-4.19%
	3	-27.50%	-27.80%	-5.81%	-5.86%	-5.78%	-5.86%	-27.29%	-27.80%	-2.96%	-4.22%
	4	-13.59%	-13.72%	-2.18%	-2.19%	-2.17%	-2.19%	-13.50%	-13.72%	-3.47%	-5.28%
Minimum		-30.68%	-31.05%	-8.43%	-8.51%	-8.38%	-8.51%	-30.43%	-31.05%	-4.13%	-6.60%
Maximum		-10.83%	-10.93%	-1.52%	-1.53%	-1.51%	-1.53%	-10.76%	-10.93%	0.00%	0.00%

QUANTITY:

		SUPPLIED:								TRADED:			
		Steers & Heifers		Cows & Bulls		High Quality Beef		Low Quality Beef		Offshore (Low)		North American	
		EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:		-1.43%	-1.56%	0.23%	2.46%	-1.44%	-1.57%	-0.27%	0.73%	8.82%	0.00%	-50.00%	1.24%
Quarter	1	-1.34%	-1.54%	0.19%	1.89%	-1.36%	-1.56%	-0.28%	0.70%	9.21%	0.00%	-50.00%	0.91%
	2	-1.74%	-1.74%	0.23%	2.47%	-1.75%	-1.75%	-0.36%	0.52%	9.27%	0.00%	-50.00%	1.19%
	3	-1.23%	-1.37%	0.22%	3.04%	-1.23%	-1.38%	-0.20%	0.94%	8.37%	0.00%	-50.00%	1.05%
	4	-1.46%	-1.59%	0.27%	2.66%	-1.47%	-1.60%	-0.28%	0.75%	8.58%	0.00%	-50.00%	2.45%
Minimum		-2.53%	-2.55%	0.00%	0.00%	-2.53%	-2.55%	-0.58%	-0.56%	4.43%	0.00%	-50.00%	-0.01%
Maximum		0.00%	0.00%	0.34%	4.53%	0.00%	0.00%	0.00%	1.50%	17.17%	0.00%	-50.00%	3.27%

Table 3.S27: Effects of a U.S. Tariff of 6.1 Percent

Calculated as Percent Change Relative to Base:

PRICES:	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows and Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	4.85%	4.89%	0.90%	0.91%	0.90%	0.91%	4.81%	4.89%	0.65%	1.01%
Quarter 1	4.55%	4.59%	0.86%	0.87%	0.86%	0.87%	4.52%	4.59%	0.55%	0.90%
2	4.61%	4.65%	0.81%	0.81%	0.80%	0.81%	4.58%	4.65%	0.62%	1.00%
3	6.33%	6.40%	1.23%	1.24%	1.22%	1.24%	6.28%	6.40%	0.68%	0.97%
4	4.12%	4.15%	0.74%	0.75%	0.74%	0.75%	4.09%	4.15%	0.76%	1.16%
Minimum	1.84%	1.85%	-0.12%	-0.12%	-0.12%	-0.12%	1.83%	1.85%	0.00%	0.00%
Maximum	7.77%	7.87%	1.88%	1.89%	1.86%	1.89%	7.71%	7.87%	0.98%	1.58%

QUANTITY:	SUPPLIED Steers & Heifer		Cows and Bulls		High Quality Beef		Low Quality Beef		TRADED: Offshore (low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	0.34%	0.37%	-0.05%	-0.57%	0.34%	0.37%	0.07%	-0.16%	0.00%	-11.70%	13.63%	0.16%
Quarter 1	0.31%	0.36%	-0.04%	-0.43%	0.32%	0.36%	0.07%	-0.16%	0.00%	-11.70%	12.96%	0.11%
2	0.40%	0.40%	-0.05%	-0.56%	0.40%	0.40%	0.08%	-0.12%	0.00%	-11.70%	12.37%	0.15%
3	0.32%	0.35%	-0.05%	-0.72%	0.32%	0.35%	0.06%	-0.20%	0.00%	-11.70%	12.85%	0.15%
4	0.35%	0.38%	-0.07%	-0.63%	0.35%	0.39%	0.07%	-0.17%	0.00%	-11.70%	16.45%	0.27%
Minimum	0.00%	0.00%	-0.09%	-1.03%	0.00%	0.00%	0.00%	-0.33%	0.00%	-11.70%	5.21%	-0.01%
Maximum	0.61%	0.60%	0.00%	0.00%	0.61%	0.60%	0.14%	0.11%	0.00%	-11.70%	20.30%	0.38%

Table 3.S28: Effects of a U.S. Tariff of 1.6 Percent

Calculated as Percent Change Relative to Base:

PRICES:

	Low Quality Beef		High Quality Beef		Steers & Heifers		Cows and Bulls		Feeder Cattle	
	EC	WC	EC	WC	EC	WC	EC	WC	EC	WC
AVERAGE:	1.41%	1.42%	0.26%	0.26%	0.26%	0.26%	1.40%	1.42%	0.19%	0.29%
Quarter 1	1.32%	1.33%	0.25%	0.25%	0.25%	0.25%	1.31%	1.33%	0.16%	0.26%
2	1.34%	1.35%	0.23%	0.24%	0.23%	0.24%	1.33%	1.35%	0.18%	0.29%
3	1.84%	1.86%	0.36%	0.36%	0.36%	0.36%	1.82%	1.86%	0.20%	0.28%
4	1.20%	1.21%	0.22%	0.22%	0.21%	0.22%	1.19%	1.21%	0.22%	0.34%
Minimum	0.53%	0.54%	-0.03%	-0.03%	-0.03%	-0.03%	0.53%	0.54%	0.00%	0.00%
Maximum	2.26%	2.29%	0.55%	0.55%	0.54%	0.55%	2.24%	2.29%	0.29%	0.46%

QUANTITY:

	SUPPLIED								TRADED:			
	Steers & Heifer		Cows and Bulls		High Quality Beef		Low Quality Beef		Offshore (low)		North American	
	EC	WC	EC	WC	EC	WC	EC	WC	Canada	U.S.	Low	High
AVERAGE:	0.10%	0.11%	-0.02%	-0.17%	0.10%	0.11%	0.02%	-0.05%	0.00%	-3.40%	3.96%	0.05%
Quarter 1	0.09%	0.10%	-0.01%	-0.13%	0.09%	0.11%	0.02%	-0.05%	0.00%	-3.40%	3.77%	0.03%
2	0.11%	0.11%	-0.01%	-0.16%	0.12%	0.12%	0.02%	-0.04%	0.00%	-3.40%	3.77%	0.04%
3	0.09%	0.10%	-0.02%	-0.21%	0.09%	0.10%	0.02%	-0.06%	0.00%	-3.40%	3.73%	0.04%
4	0.10%	0.11%	-0.02%	-0.18%	0.10%	0.11%	0.02%	-0.05%	0.00%	-3.40%	4.78%	0.08%
Minimum	0.00%	0.00%	-0.03%	-0.30%	0.00%	0.00%	0.00%	-0.10%	0.00%	-3.40%	1.52%	-0.00%
Maximum	0.18%	0.17%	0.00%	0.00%	0.18%	0.17%	0.04%	0.03%	0.00%	-3.40%	5.90%	0.11%

4.0 Regulatory Considerations

The regulatory environments of all major beef producing countries in the world is diverse and is reflected in the respective export status of each. Canada has a very high standing with regard to its ability to export cattle, semen, embryos, and all classes of beef to virtually anywhere in the world. By the same token, this high status makes it important to preclude beef imports from countries that have less control over economically significant livestock diseases against which Canadian cattle have no natural protection and that can be transmitted through meat.

The major known cattle disease of significant economic importance that can be transmitted by meat is foot and mouth disease. Foot and mouth disease results from a virus that causes severe lesions in the mouths and on the feet of cattle. Mortality in calves is high and moderately low in mature cattle. However, the biological and, therefore, economic productive potential of recovering cattle is regarded as generally low.[1] Consequently Agriculture Canada permits beef imports from countries that are deemed very low or low risk on a graduated scale of very low to high (Table 4.1).

At this time the major South American beef producing nations with high export capacity are precluded from shipping fresh beef to Canada because of the high risk of transmission of foot and mouth disease.

4.1 Current Ramifications of Foot and Mouth Disease Restrictions on Imports for Canada

Canada has traditionally been insulated from the potentially severe direct economic impacts of beef imports from high-risk foot and mouth disease beef exporters such as Brazil and Argentina. These countries account for over 45 percent of world production (Table 4.2). Under consideration at this time is a GATT proposal to standardize scientific criteria to prove, for low-risk certification purposes, that countries or regions of countries are foot and mouth disease free.[2]

---

[1] Agriculture Canada research interviews, 1990.

[2] Agriculture Canada research interviews, 1990.

Table 4.1. Foot and Mouth Disease Risk Export Categories for Countries Exporting Beef to Canada (Source: Agriculture Canada)

Lowest Risk	Low Risk Countries	Medium Risk Countries	High Risk Countries
United States	Australia Denmark Finland Iceland Ireland Japan Mexico New Zealand Norway Sweden United Kingdom	Austria Belgium France Germany (Federal Republic) Luxemburg Netherlands Switzerland	All other countries

Canadian trade policy officials tend to regard this move as a progressive step that will promote freer overall trade between nations that are currently excluded by health regulations from supplying beef to Canada.[3]

A very different opinion is expressed by senior regulatory officials who question the validity and credibility of certification procedures and the relatively unrestricted mobility of South American cattle across national and sub-national boundaries.[4]

The economic value of maintaining universal export status to permit access to existing and emerging world beef and cattle markets is critical to the viability of the Canadian beef industry, to say nothing of the need to prevent occurrence of foot and mouth disease in the Canadian herd. Moreover, there is a need to protect the considerable investment in achieving foot and mouth disease-free status.

The current costs of eradicating foot and mouth disease in export capable countries is a substantial technical barrier to trade in fresh beef that will not soon or easily be reduced. The barrier to foot and mouth disease eradication is compounded by cultural and social factors in many of the countries that lack sufficient regulatory structure or power to enforce internal health regulations or regulate cattle and beef trade between high risk countries. Further, the costs are relatively prohibitive for capitalizing secondary processing ventures that would give Canadian market access for better quality cooked beef products from high-risk foot and mouth disease countries to the Canadian secondary processing market.

---

[3] Agriculture Canada research interviews, 1990.

[4] Agriculture Canada research interviews, 1990.

The E.E.C. is currently planning to eradicate foot and mouth disease vaccination programs and declare freedom from foot and mouth disease in 1992. As a result, those countries will probably experience some outbreaks before totally eradicating the disease.[5] This may also give some temporary respite from beef import pressure from the highly subsidized and well stocked Irish beef industry after that time.[6]

4.2 U.S.-Canada Regulatory Relationships Affecting Beef Trade

The recent announcement by the U.S.D.A. that U.S.-Canada border meat inspections will not be discontinued adds to the ongoing frustration of Canadian beef exporters. This change in U.S.D.A. inspection plans may also delay harmonization of inspection regimes that would be necessary to institute a workable reciprocal beef grading agreement. The economic impact of the renewed inspection practice to Canadian beef exporters will probably be greater in overall industry significance is undetermined at this time. Industry estimates of five cents per pound additional cost on boxed beef and carcass exports from Canada represent a genuine barrier to beef trade.[7] The potential impacts of this cost were investigated in Section 2.0.

Ordinarily shipments receive cursory visual inspections at the border, and closer checks at their destinations. Any border inspection that turns back a load will cost the shipper extra for calling in their own inspectors to check the product. If deemed acceptable it may be rerouted to the American buyer, or may be sold in Canada with a loss in value and extra transportation costs.

---

[5] Agriculture Canada research interviews, 1990.

[6] Agriculture Canada research interviews, 1990.

[7] Industry research interviews, 1990.

5.0 Policy Considerations

This section follows on the analysis reported in the previous sections. It provides an overview of Canada's legal commitments and constraints as they may affect the control of beef imports. Subsequently we discuss alternatives for changes in either the Meat Import Act or in related policies.

5.1 Current Commitments and Constraints

The international and domestic commitments under which Canada operates can be classified in four categories: GATT; CUSTA; Canadian law; and Canada's position in the multilateral trade negotiations. Each of these will be discussed briefly below in respect to the way they may have impacts on choices to change policy.

5.1.1 GATT

Canada has four types of commitment in GATT that could affect policy development regarding beef imports. The first is Article XIX. Article XIX allows a country which is a signatory to GATT to impose import restrictions on a product when three conditions are met: the imports cause serious injury to the domestic industry; the circumstances resulting in this are unforseen; and the safeguards are put in place only for the time and to the extent required to offset the injury from the imports. Canada's Meat Import Act can logically be classified as an Article XIX measure because it permits Canada to impose restrictions when it is determined that imports cause injury. The circumstances required in order to impose import restrictions under Article XIX, as discussed above, are likely responsible for the way in which Canada's law is written. This is particularly the case with respect to the amount of ministerial discretion, as will be discussed below.

A second GATT commitment is the Subsidies Code. Under the Subsidies Code, a signatory can impose import duties when an exporting country is using unfair subsidies. The definition of unfair, according to the GATT Subsidies Code, is that the imports (or other market circumstances) that result from a subsidy in the exporting country must be shown to cause material injury or the threat of material injury to producers in the importing country. If these requirements are met, then the importing country can impose a countervailing duty equal to as much as the amount of the exporting country's subsidies on imports from that country.

The third commitment in GATT is the global minimum access commitment which was discussed in Section 3.0. It is part of Canada's commitment from the Tokyo Round negotiations. If the GMAC was to be changed, it would require international negotiation.

The final aspect of Canada's GATT commitments is its responsibility respecting dispute settlement panel reports. As will be explained below, the implementation of measures such as those developed under Article XIX or the Subsidies Code are the responsibility of domestic law. It also means that domestic courts or tribunals make determinations under those laws. This leads to the requirement that countries have the opportunity to seek appeals from perceived incorrect determinations. In the case of Article XIX and, particularly, under the GATT Subsidies Code, it is possible to appeal decisions made by domestic authorities to an international panel appointed by the signatories to the GATT. Panel decisions are not binding. Thus, for example, European exporters appealed a 1985 decision to impose countervailing duties on subsidized European beef. The GATT panel agreed with the appellants that Canada did not have the right to impose duties because the original complainants, the Canadian Cattlemen's Association, did not have standing. This was decided on the ground that the subsidized imported product was beef, while cattlemen produce cattle. Thus the Canadian Cattlemen's Association was not deemed to have the standing to initiate the case. This is one GATT decision which the Government of Canada chose to not accept. Thus panel reports do not have the force of law. However, they certainly bring important political pressures.

5.1.2 The Canada-U.S. Trade Agreement

Two sections of the Canada-U.S. Trade Agreement have particular importance for the Canadian Meat Import Act. The first is Article 704, which has been alluded to many times in this report. It is the section under which Canada and the United States exempted each other from their respective meat import laws. However, it should be clearly understood that the agreement is subject to the caveat that each country has the right to impose restrictions on the other to avoid diversion from third countries when one country imposes import restrictions on third countries and the other country does not take equivalent action against the third country. Any action under this agreement can be taken only to the extent and for such period of time as is sufficient to prevent such diversion. If one country contemplates taking action under 704, it is required to notify the other country and to provide an opportunity to consult prior to taking such action.

The agreement under Chapter 11 of the Canada-U.S. Trade Agreement has also been alluded to various times earlier in this report. It is the part of CUSTA where each of the two countries exempt each other from global restrictions applied under Article XIX of the GATT, subject to either country having the right to impose restrictions on the other if imports from the other are substantial and are contributing importantly to the injury or the threat of injury caused by imports in general. Under this agreement, imports in the range of from five to ten percent or less of total imports would normally not be considered substantial. According to some personnel in the federal government, however, any surge in imports from a party which is initially excluded from a global action may lead to their subsequent inclusion if such imports undermine the effectiveness of the global action. Furthermore, these people indicate that, should either party be included in a global action taken by the other, its exports will be protected against any reductions below the trend line of its recent exports with allowance for growth. Finally, any such measure applied will be subject to compensation.

It is Article 704 and Chapter 11 which give the authors of this report considerable concern. This is, in part, because two of the authors have been heavily involved in Canadian-U.S. countervailing duty disputes under U.S. law. We, therefore, know how difficult it can be to win a dispute with the United States, when U.S. agencies make final determinations. We are advised by people in the some federal agencies that they feel assured that Canada's beef exports to the United States are secure because of Article 704 and Chapter 11. However, we recall that in 1985 or 1986, federal officials also felt assured that Canada's tripartite stabilization payments would not be countervailable for hog producers or pork producers.

Thus we have concern about Canada's protection under these two parts of CUSTA. One reason is that, as has been shown above, Canada's beef exports to the United States are usually in excess of ten percent of U.S. imports. They are more so if the U.S. ever decided to take into account exports of live slaughter cattle. As has been indicated, they are quite substantial. Thus, Canada is well above the level that could allow the United States to impose trade sanctions, especially if there was a surge of exports from Canada to the United States. The second reason we are concerned has to do with Article 704. As was indicated above, a GATT panel determined that the Canadian Cattlemen's Association did not have the required standing to bring a countervailing duty action against the European Community. While Canada has not accepted this determination, the countervail on beef from the EC will be re-examined later in 1991. The Canadian Cattlemen's Association is apparently a (particularly) interested party. It is quite conceivable, under the circumstances, that after a review, the Canadian International Trade Tribunal may find there is no longer good reason to impose countervailing duties on the European Community. The highest level of exports to Canada from the European Community before the countervailing duty was imposed was 22,000 tonnes. Our information is that the European Community has in excess of 450,000 tonnes of beef in storage presently. European Community export subsidies to other countries are in excess of $1/lb and, in some cases, in excess of $2/lb.

It is not difficult to conceive of a situation later this year in which Canada no longer has a countervail against European beef and begins to import it in fairly large quantities. The United States has a voluntary restraint agreement with the European Community that limits European exports to the U.S. to a total of 5,000 tonnes per year. If the United States were to determine that Canada has become a "back-door" for European beef going into the United States, our interpretation of Article 704 is that the United States could impose import restrictions to the extent and for such period of time as is sufficient to prevent that diversion. It is important to note that Article 704 appears to allow the United States to retaliate in response to the diversion, not to the injury caused by the diversion. As is clear from the analysis in Section 3.0, we would anticipate that an increase in European imports would not cause injury in Canada, so long as Canada had the opportunity to export to the United States. We would also anticipate that Canadian exports to the U.S. would not cause injury in the U.S. However, if the United States imposed import restraints on Canada because of Article 704, our analysis also shows that there would be very substantial injury to Canada.

Finally, in respect of Article 704 and Chapter 11, it should be pointed out that the scenario painted above could very clearly result in a surge of exports from Canada to the United States. Therefore, it is possible that the United States would be able to retaliate against Canada on the basis of both Article 704 and Chapter 11.

5.1.3 Canadian Law

Canadian law has at least two elements within it that are important considerations for any change in Canadian policy. The first is the role of the Ministers, as was explained in Section 1.0 and elsewhere. Much discretion about whether to impose import restrictions under the Meat Import Act is provided to the Ministers. In our estimation, this degree of discretion is written in because of the three conditions required for imposition of trade restrictions under Article XIX of the GATT, as explained in Section 5.1.1. It is important to be clear that there is no similar discretion under the U.S. Meat Import Law: in the U.S. the decision to impose import quotas or to negotiate a voluntary restraint agreement is triggered by the formula in the U.S. law. The procedures for interpreting it are undertaken before September 1 of each year. This is likely the reason that many commentators do not include the U.S. law as a GATT Article XIX measure and why many feel that the U.S. law is not consistent with the GATT commitments of the United States.

The second set of laws are those having to do with the GATT Subsidies Code. The major act in Canada is the Special Import Measures Act (SIMA) which converts the GATT Subsidies Code into Canadian law. The law is administered by Revenue Canada and by the Canadian International Trade Tribunal (CITT). Revenue Canada determines the level of subsidies in a countervail case. The CITT determines whether there is injury or threat of injury resulting from the subsidies. This was explained in some detail above in the discussion about the countervailing duty on European beef.

5.1.4 Canada's Position in the Multi-National Trade Negotiations

A final commitment or potential constraint is the position that Canada has taken to date in the negotiations at Geneva for a new GATT Agreement. It should be noted that the authors have recently been reminded by officials of Agriculture Canada (in a different context) that positions are merely positions and may not be consistent with outcomes. However, given this caveat, Canada's position about the Meat Import Act has two components. First, Canada and the United States have apparently offered to remove their meat import legislation. Perhaps more importantly, Canada has taken the position that voluntary restraint agreements should be outlawed and replaced by tariff equivalents. If this is official policy and it is accepted in GATT, then some of the alternatives discussed below are not feasible.

5.2 Canada's Alternatives

There are a number of alternatives that can be identified from the analysis reported in Section 3.0 and in light of Canada's legal commitments described in Section 5.1. The alternatives and their implications are discussed below. It should be evident that many of the economic costs and benefits of these are described in the analysis in Section 3.0. Where necessary, the discussion below will relate back to Section 3.0.

The alternatives are as follows:

Preserving the Status Quo

Under a status quo alternative, the Federal Cabinet would invoke the Meat Import Act at its discretion. This would likely occur when the Ministers involved perceived that imports constitute a threat of injury. Simultaneously, the industry would rely on the judgement of the Canadian International Trade Tribunal to impose existing mechanisms on unfairly traded products under the Special Import Measures Act.

The analysis in Section 3.0 implies that following a status quo alternative would not likely be costly in economic terms, so long as the major circumstances of this industry do not change. However, as was expressed above, the authors have rather grave reservations about whether conditions will remain constant. In particular, the decision of the GATT panel regarding standing of the Canadian Cattlemen's Association may, along with other factors, contribute to the removal of the countervailing duty on imported beef from the European Community. If the duty is removed, European imports increase and Canada's exports to the United States also increase, then we are concerned that the status quo might not provide protection for this industry. Moreover, it would cause the Ministers a grave dilemma to impose the Meat Import Act against the European Community if the Canadian International Trade Tribunal determined that there is no injury or threat of injury from European imports. Finally, since Canada has exempted the U.S. from its Meat Import Act in Article 704 of CUSTA, the status quo must be changed at least to adjust the formula in the Meat Import Act by removing American product from the calculations.

More Aggressive Use of Existing Meat Import Act

A second alternative is to employ the existing Act (amended to explicitly recognize the exemption of the United States) more aggressively than has been done in the past. This would be accomplished by altering the judgement of Ministers about injury or threat of injury in such a way that fewer imports are required in order to implement the Act.

We do not recommend this alternative for at least two reasons. First, Ministers would remain in the dilemma outlined above if the Canadian International Trade Tribunal determined there is no injury or threat of injury in countervailing duty or anti-dumping cases. It would not be particularly good for Canada's international reputation to have a Canadian agency determine no injury or no threat of injury, and therefore, no countervailing duty, but then to have Ministers of the Crown determine the opposite, and therefore, impose import quotas. Moreover, as Ministers change, so do their interpretations. From our perspective, a great deal of Ministerial discretion imposes a great deal of uncertainty on both the domestic industry as well as on exporters in offshore countries. It is, therefore, preferable that all players know the rules of the game in which they are participating. Finally, Article XIX of the GATT requires that under some circumstances an action under Article XIX requires financial compensation to be paid. To use the Act more aggressively, would increase the risk of needing to pay compensation.

Revise or Amend the Meat Import Act

Several potential amendments of the Meat Import Act could be considered. One that must be considered is to revise the formula to omit American imports. This must be done in any event in order to be consistent with Article 704 of the Canada-U.S. Trade Agreement. The authors can see no immediate reason to amend this in any way other than to omit the U.S. data from the calculations and to use 1989 or the average of 1989 and 1990 (the first two years after the beginning of the Canada-U.S. Trade Agreement) as the basis for calculating allowable access by offshore countries.

The second possibility for amending the Act is to reduce the Ministerial discretion so that actions under Canada's act would be more consistent with those under the U.S. act in regard to the imposition of import quotas or, at least, the possible negotiation of voluntary restraint agreements.

A third area of consideration for amendment is to change the access formula to be more consistent with the U.S. access formula. As was pointed out in the analysis in Section 3.0, the current access formula is at least as effective if not more so than the U.S. formula. Thus there seems to be very little reason to change it. On the other hand, the difference in the economic impacts of using the Canadian or the U.S. formula are so small that one could be quite indifferent about which formula is written in. This is particularly the case so long as the formula in the Canadian Act is overwhelmed by the Global Minimum Access Commitment. As a result, the argument between using Canada's current formula and the current formula of the U.S. is quite academic.

The decision about whether to reduce Ministerial discretion has two opposing arguments. Our personal preference would be to reduce Ministerial discretion for the reasons outlined in the previous section - ie so that less uncertainty is associated with the Act. On the other hand, to have a formula as the major determining criterion probably would remove the Canadian act from a legally accepted position under Article XIX of the GATT. This is because of the fact that Article XIX requires that there be serious injury caused by imports. Unless the formula developed was clearly consistent with quantities that could cause injury, then it probably would render the Meat Import Act illegal under Article XIX. Our analysis in Section 3.0 suggests that development of such a formula would be impossible, assuming that the Canada-U.S. border is open. Moreover, there seems to be something incongruous between the notion of a mechanical formula to determine access and the Article XIX requirement that such actions be imposed when there are "unforseen" circumstances.

On the other hand, amending the Canadian act to remove Ministerial discretion and to put more weight on the formula would make it much more consistent with what the United States does in its act. Whether the U.S. act is consistent with Article XIX or not appears to be irrelevant given that the U.S. act exists.

Negotiate Voluntary Restraint Agreements

Canada has never used voluntary restraint agreements as part of its method of operation under the Meat Import Act. It is our understanding that the European Community has offered to negotiate a VRA in respect to the countervail issue on beef. There is nothing in Canadian policy (with the exception of Canada's position in the GATT negotiations) that would preclude such an alternative. It would have the advantage of being much less costly and less uncertain than pursuing a countervailing duty. Depending on its level, it would probably have very little impact on the Canadian market (again, assuming the U.S. border remains open). It should preclude the possibility of retaliatory action by the United States under Article 704 of the Canada-U.S. Trade Agreement.

The foregoing refers to the use of a voluntary restraint agreement in a particular situation. It is quite feasible to consider the possibility of extending VRA's to more general application when there is a determination by the Ministers that imports from offshore threaten to cause injury in Canada. This is done under the U.S. Meat Import Law when imports threaten to exceed access levels generated by the formula included in the law.

It would seem possible to also extend the notion of voluntary restraint agreement to other situations. For example, Canada is essentially precluded from the European Community market for beef by tariffs, variable import levies and European restrictions on the use of hormones. Even if the hormone restriction was not constraining the EC tariff on beef, the variable import levy and other factors essentially keep Canada out of the European market. It is our perception that at least some of the Canadian and U.S. alacrity to keep European product out of the Canadian market is North America's frustration with the European policy. Obviously, there is also a great deal of concern about European export subsidies. However, one way to determine whether the European Community is seriously interested in being commercial trading partner is to offer it a two-way voluntary restraint agreement. A two-way VRA might include guaranteed access by Canada to the European market of, for example, 15,000 tonnes and a guarantee of 15,000 tonnes in Canada. The VRA could also contain additional provisions that would ensure that any beef exported from Canada to the European Community would have no banned substance used in its production, that the EC would waive variable import levies for these 15,000 tonnes of Canadian product, and/or that the EC would not provide export subsidies on the 15,000 tonnes that was allowed into the Canadian market. Such an agreement would go far to liberalize trade at least to some extent within the existing legal framework of both jurisdictions.

Tariffication of the Meat Import Act

Another alternative is to convert Canada's Meat Import Act to an equivalent tariff. This would be done in conjunction with a conversion by the United States of its Meat Import Law into an equivalent tariff. In this way both countries would be providing the same protection to their industries. They would have exempted each other from the tariffs, and, therefore, their Meat Import Laws. This is clearly consistent with the commitment under Chapter 11 of the Canada-U.S. Trade Agreement. It is a method which should protect Canada from retaliation by the United States because there would be no particular need to use Canada as a back door to the U.S. market.

Negotiate a Lower Global Minimum Access Commitment

The analysis in Section 3.6 points clearly to the fact that Canada's Global Minimum Access Commitment has been consistently above the access levels calculated with the formula included in the Meat Import Act during the 1980's. As a result, the formula in the Meat Import Act is quite redundant. It simply is of no value to have a maximum which is consistently smaller than a minimum.

In addition to the foregoing problem, Canada has exempted the United States from Canada's Meat Import Act. This, in effect, gives the United States unlimited access to the Canadian market. And, the global minimum access has no meaning with respect to its U.S. component: it makes no sense to retain U.S. imports in a formula that calculates minimum access when Canada, under CUSTA, has said that the U.S. minimum in effect, is as much as the U.S. wants to export. Therefore, it would appear reasonable that Canada should renegotiate its GMAC. If this were to occur, the most fundamental change in the GMAC should be to exclude U.S. imports from the calculations, ie base minimum access levels on historic levels from countries other than the U.S.. Second, since there is such inconsistency between the GMAC and the formula used in the Meat Import Act, it would seem reasonable to use the same formula for both things. In the aggregate, our analysis would indicate that the economic implications of using a formula like the one in the Meat Import Act or like the one in the GMAC makes little difference. Similarly, it would make little difference whether a 1980 base or a 1990 base is used. We would favour, if possible, using a formula like the one in the Meat Import Act simply because it would make the Canadian act relatively harmonious with the U.S. act. This would cause more certainty for all traders.

A Combination of the Above Options

There would appear to be two potential combinations of the foregoing alternatives that could be considered. The components are as follows. First, amend the formula in the Meat Import Act to either bring it in line with the U.S. formula or to simply recalculate it not using U.S. imports as part of the formula, since Canada has exempted the U.S. from the Meat Import Act. A second component of this would be to negotiate a new Global Minimum Access Commitment in which the minimum formula in the GMAC would be the same as the maximum formula in the Meat Import Act. A third component would then be to use the GMAC (or MIA formula) to indicate the minimum access, but also to signal the point at which voluntary restraint agreements might be negotiated. This would reduce considerably the Ministerial discretion in the Act. Our views on Ministerial discretion have been provided earlier: it always seems better to have defined rules. If the Meat Import Act is to be retained, the proposal outlined here would be a feasible way of retaining control over imports. It gives Canada considerable control over imports, while protecting Canada's interests under Article 704 and Chapter 11 of the Canada- U.S. Trade Agreement. It would also demystify the process and the quantities imported would not have significant impacts on the Canadian market. The only issue is whether the outcome would be consistent with Canada's commitments under Article XIX of GATT. Obviously

it also is contrary to Canada's position on voluntary restraint agreements in the current MTN.

A second alternative is to simply join with the United States in a tariffication exercise that would replace the GMAC, the formula under the Meat Import Act, and Ministerial discretion with an ad valorem tariff. The only danger associated with this alternative would arise if countervailing duty or anti-dumping procedures were initiated in both countries against a third country and the determinations were different. For example, assume that both Canada and the United States impose a six percent ad valorem tariff against imports of low quality beef. Further, assume that in doing so, the United States drops its voluntary restraint agreement with the EC, and that Canada has no countervailing duty against European beef. Assume further that European exports to both Canada and the United States were subsequently subsidized and that they increased substantially. Further, assume that a countervailing duty action is brought against the European Community in both Canada and the United States. Finally, assume that under U.S. law, a final determination which requires a countervailing duty to be imposed is made but that the opposite occurs in Canada. Under these circumstances, it would appear that Canada once again would be vulnerable to U.S. sanctions under Article 704 of CUSTA.

5.3 Conclusions

It should be evident from the analysis in Section 3.0 that the following are the important factors to consider in assessing the value of each alternative identified in 5.2. First, so long as the U.S. market is open to

Canada, offshore imports to Canada in quantities considerably larger than those of the past decade cause no injury to Canadian cattle producers. Second, the major growth in Canadian imports has been from the United States. Third, Canada has exempted the United States from its Meat Import Act under the Canada-U.S. Trade Agreement. Fourth, the most important risk facing the Canadian industry from offshore imports is not the imports themselves, but rather the possibility that the United States would place trade restrictions against Canada if Canadian exports to the United States increased when Canadian imports from offshore increase.

Given the foregoing circumstances, the ideal situation for Canada would be that its Meat Import Act provides enough control over offshore imports to protect its industry against U.S. trade sanctions. In other words, the more harmony there is between Canadian and U.S. policies, the less risk there is of disharmony between the two countries under Article 704 and Chapter 11 of CUSTA. Nearly all of the alternatives discussed above come close to being able to do that. The ones that are the most questionable are the status quo or a situation in which tariff equivalents are used in place of the Canadian and U.S. laws. The status quo is questionable because it is simply not possible to forecast how Ministers will exercise their discretion. Similarly, under a scenario in which the quantity restrictions of the Meat Import Act are replaced by an equivalent tariff, we have pointed out the potential danger if North America became the recipient of substantial quantities of subsidized exports from offshore. It is simply not possible to forecast what the outcome of countervailing duty actions in the two countries would be.

Based on the foregoing, we feel that any of the alternatives described under the sections above about revising the Meat Import Act, negotiating voluntary restraint agreements, negotiating a lower global minimum access commitment or the first combination alternative would be sufficient to protect the Canadian market.

Bibliography

Agriculture Canada. Livestock Market Review. Agriculture Development Branch. Various annual Issues 1980-1989.

Agriculture Canada. Food Market Commentary. Communications Branch, Ottawa, Ontario. Volume Issues 1980 - 1989.

Agriculture Canada. Canada Livestock And Meat Trade Report, Market Information Service, Red Meats Section, Agriculture Development Branch, Ottawa, Ontario. Volume Issues 1980 -1989 (weekly).

Agriweek. Going South, Canadian Cattle Exports Are Soaring, Confounding Several Conventional Theories. Agriweek, Winnipeg, Manitoba. June 25, 1990.

American Meat Institute. Meat Facts 1989 Edition. American Meat Institute, Washington, DC. August, 1989.

Anonymous, Agriculture Canada, Summary of Results of Two Simulations Made on Agriculture Canada's Beef Model with Respect to Beef Imported From the EEC.

Auckland Farmers Freezing Co-operative Ltd. (AFFCO). AFFCO (company brochure), Auckland, New Zealand.

Bowers P. The Globalization of Agriculture. Meat Processing. June, 1990.

Busby A. (editor). The New Zealand Meat Producer. New Zealand Meat Producers Board, Wellington, New Zealand. July-September, 1989 .

Camerer D.L., D.R. Neuwirth. Lite'ning Up a Little: Taking Advantage of the hot'lite and healthy' market means taking steps not to get left out in the cold. Meat Processing. June 1990.

Campbell C. Definition of No Roll Beef. Memorandum to M. Skok. Agriculture Canada. Food Production and Inspection Branch. 23 August 1990.

Canadian Cattlemen's Association. Impact of Subsidized EEC Beef Imports on the Canadian Beef Cattle Industry. unpublished paper 7 May 1985.

Canadian Meat Council. Notes on the Competitiveness on the Canadian Red Meat Packing Industry. 3 May 1990.

Canadian Cattlemen's Association. Canadian Cattlemen's Association Position on Beef Exports. 1988.

Canadian Meat Council. Submission to the U.S. International Trade Commission Respecting Conditions of Competition Between U.S. and Canadian Cattle and Beef Inventories. 2 March 1987.

Canadian Cattlemen's Association. How Imports Hurt. Unpublished Paper. 2 October 1989.

Canadian International Trade Tribunal, Grain Corn Public Interest, Ref. NN-89-002, Dec. 29/89.
Canadian Meat Council. Comments on Canada's International Meat Trade and Free Trade with the U.S.A.. Canadian Meat Council. 10 June 1985.

Canadian Meat Council. Food Service Meat Manual. Canadian Meat Council, Islington , Ontario August, 1988.

Canagri Annual Report. 1986.

Cargill Foods. Cargill Foods(company brochure) . High River, Alberta.

Charlebois, Pierre, Agriculture Canada, Subsidized Beef Imports From the European Economic Community (EEC).

Cogger M., Wappel T.W., and B. Domm. Meat Import Act - 1990 Beef and Veal Import Restriction and Suspension Orders. Memorandum to the Minister, Agriculture Canada. 27 October 1989.

Connor J. Empirical Challenges In Analyzing Market Performance In The U.S. Food System . Department of Agricultural Economics, Purdue University. August 1990.

Davis, Ernest E., Food and Fibre Economics, Texas Agricultural Extension Service, AECS, volume 6, No. 7, September 1977.

Dougherty K. Are there too many chains ? Merger rumours in Quebec food pose a key question . Financial Post, Toronto, Ontario. June 25, 1990.

Environmental Protection Agency. SSEA's Speech to Paddle Valley Feeders Association, Mayerthorpe, Alberta, August 6, 1990. Memorandum. 2 August 1990.

External Affairs. Name of Bilateral Negotiations Between the Delegations of Canada and Australia to the Multilateral Trade Negotiations. Geneva, 22 January 1980.

External Affairs. Meat Import Act: Import Levels for 1990. unpublished report. 1990.

External Affairs. Canadian/U.S. Meat Import Acts: FTA Provisions, unpublished paper. undated.

Freebairn, J. W. and G. C. Rauser, "Effects of Changes in the Level of United States Beef Imports", American Journal of Agricultural Economics, Volume 57, November 1975, pp. 676-688.

General Agreement On Tariffs And Trade (GATT). The International Markets For Meat ,1985 . GATT, Geneva, Switzerland. January, 1986.

General Agreement On Tariffs And Trade (GATT). The International Markets For Meat , 1986/1987. GATT, Geneva, Switzerland . January , 1987 .

General Agreement On Tariffs And Trade (GATT) . Canada - Imposition Of Countervailing Duties On Imports Of Manufacturing Beef From The EEC. GATT , Geneva ,Switzerland. October 13, 1987.

Gracey C.A. Response to Paper: Implications of EEC Beef Exports to Canada for Canadian Beef and Cattle Markets. Canadian Cattlemen's Association. undated.

IBP Inc. Experience The Difference. IBP Inc. Dakota City, Nebraska. 1986.

International Meat Council. Situation and Outlook in the International Meat Markets. General Agreement on Tariffs and Trade. 1 June 1990.

Johnson D. et al. Competitive Issues In The Beef Sector: Can Beef Compete In The 1990's. Hubert H. Humphrey Institute of Public Affairs, University of Minnesota; Minneapolis, Minnesota. October, 1989.

Kaplan S. The Economic Effects Of Significant U.S. Import Restraints , Phase II: Agricultural Products And Natural Resources. United States International Trade Commission. Washington, DC. September 1990 .

Lattimore, Ralph and Harry de Gorter, Impact of Beef Imports on the Canadian Beef Market, Agriculture Canada Working Paper, Ottawa, March 1980.

Lattimore R., DeGorter H. Impact Of Imports On The Canadian Beef Market. Agriculture Canada, International Trade Policy Division, Policy Planning and Economics Branch. March, 1980.

Lutz D., Scheer J. An Analysis of Canadian Beef Imports From The United States. Agriculture Canada, Agriculture Development Branch, Alberta Office. Edmonton, Alberta. January, 1988.

Martin L., Runge F., Van Duren E. Canada And The U.S.: Relative Competitiveness Of Selected Agri-Food Industries . Department of Agricultural Economics And Business , University of Guelph, Guelph, Ontario. August, 1990.

Martin K. Farm aid slash proposed. The Edmonton Sun, Edmonton, Alberta. July 31, 1990.

Martin, Larry and Richard Haack, "Quarterly Beef Supply Response in North America", Canadian Journal of Agricultural Economics, Nov. 1977.

Martin, Larry and E. van Duren, The Relationship Between Imported Beef from the EEC and Prices for Beef and Cattle in Canada, Report prepared for the Canadian Import Tribunal, June 1986.

Meat Hygiene Division. Circular: High Quality Beef. Agriculture Canada, Food Production and Inspection Branch. 10 January 1981.

National Policy Education Committee. Agricultural Trade Between the United States and Canada. National Policy Education Committee. September 1987.

NCA Beef Industry Concentration/Integration Task Force . Beef In A Competitive World, Final Report of the NCA Beef Industry Concentration/Integration Task Force . NCA Executive Committee.
October, 1989 .

Nelson K.E., Duewer L.A., and T.L. Crawford. Reevaluation of the Beef Carcass-to-Retail Weight Conversion Factor. United States Department of Agriculture. 1989.

Pugh G.E., Factors Affecting Trade Between Canada and the United States in Cattle, Calves, Beef and Veal. Agriculture Canada Working Paper 9/87. June 1987.

Purcell W. Economics of Consolidation in the Beef Sector: Research Challenges. Research Institute on Livestock Pricing, Agricultural Economics, Virginia Tech. August 1990.

Purcell W. The Case Of Beef Demand, A Failure By The Discipline. Choices. Second Quarter 1989.

Roningen, Vernon and Praveen Dixit, Economic Implications of Agricultural Policy Reforms in Industrial Market Economies, U.S. Department of Agriculture, Economic Research Service, Staff Report No. AGES 89-3, Washington, D.C., August, 1989.

Schacht H. Beef Companies Come Under Attack. San Francisco Chronicle 21 June 1990.

Smith G. Value-Based Beef Marketing. Texas A&M University, College Station , Texas. March 13 1990.

Statistics Canada. Assorted Disappearances. Statistics Canada. 3 May 1990.

Statistics Canada. Livestock and Animal Products Statistics. Minister of Supply and Services Canada. Various annual issues 1980-1989.

Statistics Canada. Exports by Commodity. Minister of Supply and Services Canada 1989. Various monthly issues 1974-1989.

Stevenson M. Move 'em Out, Are rising cattle exports cause for concern? Alberta Report, Edmonton, Alberta. April 30, 1990.

Taylor P. At Home on the Range, Canada's beef industry is moving to Alberta but there is trouble ahead. Alberta Report, Edmonton, Alberta. February 19, 1990.

The Alberta Cattle Commission. Preparing For Change ; A Study Of The Impact Of Regulatory Costs On The Competitive Position Of Alberta's Red Meat Industry Under The Free Trade Agreement. Calgary, Alberta.

The Canadian Cattlemen's Association, Subsidization Complaint in Respect of Boneless Manufacturing Beef Originating in or Exported From the European Community, 1985.

U.S. Department of Agriculture and Cooperating State Agencies. The Market News Service on Livestock, Meat, Grain, and Wool. U.S. Department of Agriculture and Cooperating State Agencies. undated.

United States Department of Agriculture. Livestock Meat Wool Market News. U.S.D.A., Agricultural Marketing Service, Washington,DC. Volume Issues 1980 - 1989(weekly).

United States Department of Agriculture. Livestock Slaughter. National Agricultural Statistics Service, Washington, DC. Volume Issues 1980 - 1989 (weekly).

United States Department of Agriculture. Cattle. National Agricultural Statistics Service , Washington, DC. Volume Issues 1980 - 1989 (weekly and annual).

US Safeway Annual Report. 1985.

USDA Livestock and Poultry Situation and Outlook. Economic Research Branch. Various monthly issues 1980-1989.

USDA Livestock and Meat Statistics, 1984-88. Washington DC 20005-4788. September 1989.

van Duren, E. The Impact of Subsidized Boneless Manufacturing Beef Imports From the European Economic Community on the Canadian Cattle Industry, Master Thesis, University of Guelph, Guelph, Ontario, August 1987.

Van Duran E. H.K., The Impact of Subsidized Boneless Manufacturing Beef Imports from the European Economic Community on the Canadian Cattle Industry. University of Guelph Master of Science Thesis. August 1987.

Winslow G. A Competitive Act. Cattlemen. August, 1990.

Winslow G. A Competitive Act. Cattlemen. August 1990.

Yolles B., McManus K. Comments Of The Australian Meat And Live-Stock Corporation On The Proposed Investigation To Estimate Tariff Equivalents Of U.S. Quotas On Agricultural Imports. Clifford and Warnke, Washington, DC. December, 1989.

Yolles B., Mcmanus K. Comments Of The Australian Meat And Live-Stock Corporation On The Economic Effects Of Significant U.S. Import Restraints On Imports Of Agricultural Products, The Meat Import Act. Clifford and Warnke, Washington, DC. February, 1990.

Yolles B., Mcmanus K. Post-Hearing Comments Of The Australian Meat And Live-Stock Corporation On The Economic Effects Of Significant U.S. Import Restraints On Imports Of Agricultural Products, The Meat Import Act. Clifford and Warnke, Washington, DC. March, 1990.